Dear Occupational Safety and Health Administration:

Due to your extension[1], which is gracious for other stakeholders, this provides me additional time to review the proposal and the reasoning behind the submission and submit input. This input is on both the emergency temporary standard and the proposed final rule. These specific comments (brief) are based on the Occupational Safety and Health Administration (OSHA) document published on June 21, 2021 in the Federal Register. OSHA is statutorily required to schedule a hearing no later than August 20, 2021 pursuant to 29 U.S.C. §655(b)(3). The thirty day extension by OSHA, notwithstanding 29 U.S.C. §655(b)(2), gives a period of time to review the emergency temporary standard (ETS) line by line and I appreciate that.

Please be aware that additional measures are required beyond what I initially proposed due to the B.1.617.2 variant. My petition, found at docket number OSHA-2020-1034, is composed of three attachments, and was broken up solely due to file size. The first attachment states the primary two errors OSHA made in the ETS, namely denying that all workers are at grave risk and the mode of transmission is not through the airborne route.[2] The second attachment continues with the remaining grounds.[3] The third attachment specifies the relief I was requesting.[4] I demand a hearing and request the opportunity to cross examine on the two crucial issues and on other issues where testimony is taken.

Sincerely,

Theo Allen

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[1] Occupational Safety and Health Administration (OSHA). (2021, July 8). *OSHA extends comment period for COVID-19 healthcare emergency temporary standard*. https://www.osha.gov/news/newsreleases/trade/07082021.
[2] https://downloads.regulations.gov/OSHA-2020-0004-1034/attachment_1.pdf
[3] https://downloads.regulations.gov/OSHA-2020-0004-1034/attachment_2.pdf
[4] https://downloads.regulations.gov/OSHA-2020-0004-1034/attachment_3.pdf

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I. Executive Summary

The United States and the World faces a pandemic with devastating consequences, as coronavirus has cost the lives of over four million globally[5] and over six hundred thousand lives in the United States.[6] For the United States population of 332,495,629 as of July 7, 2021[7], we had over 33.6 million Americans who tested positive, meaning over one in ten Americans has tested positive.[8] But while we have received the gift of remarkably effective vaccines, through our actions in failing to stop the virus through vaccination and non pharmaceutical interventions, we are squandering the ability of the vaccines to protect us and encouraging variants that easily evade the protections of the vaccine to develop[9].

With every breath[10] we take around others, we may be breathing in this, potentially, fatal virus. And while stopping this public health threat should be obvious, States have enacted measures to block mandating the most powerful of these tools, namely to require getting a vaccine that prepares your body to fight this virus when you breath it in, and to wear something that limits how much of this dangerous virus you

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[5] Slotnik, D. E. (2021, July 8). *The world's known Covid death toll passes four million.* The New York Times. https://www.nytimes.com/2021/07/08/world/covid-death-toll-four-million.html.

[6] Centers for Disease Control and Prevention (CDC). (2021, July 8). *COVID data tracker. Trends in number of COVID-19 cases and deaths in the US reported to CDC, by state/territory: Trends in Total COVID-19 Deaths in the United States Reported to CDC.* https://covid.cdc.gov/covid-data-tracker/#trends_dailytrendscases.

[7] U.S. and World Population Clock. United States Census Bureau. (Accessed 2021, July 8). https://www.census.gov/popclock/.

[8] Centers for Disease Control and Prevention (CDC). (2021, July 8). *COVID data tracker. Trends in number of COVID-19 cases and deaths in the US reported to CDC, by state/territory: Trends in Total COVID-19 Deaths in the United States Reported to CDC.* https://covid.cdc.gov/covid-data-tracker/#trends_dailytrendscases.

[9] Yong, E. (2021, July 1). *The 3 Simple Rules That Underscore the Danger of Delta*. The Atlantic. https://www.theatlantic.com/health/archive/2021/07/3-principles-now-define-pandemic/619336.

[10] Scheuch, G. (2020). Breathing Is Enough: For the Spread of Influenza Virus and SARS-CoV-2 by Breathing Only. *Journal of Aerosol Medicine and Pulmonary Drug Delivery*, 33(4), 230–234. https://doi.org/10.1089/jamp.2020.1616.

breath in, namely to wear something that covers your face, a mask.[11] And despite guidance from our national public health agency, the United States Center for Disease Control and Prevention (CDC) to wear a mask if not yet fully vaccinated, people are not complying with this advice.[12] This is placing into not just substantial, but grave danger, not just for every employee at work, but to every American when they interact with others, even if vaccinated.[13] And sadly, it mandates strong actions be taken to reverse these trends. Workers, and all Americans, need a hero, whose mission is to protect the safety and health of workers at work[14]. That hero is the United States Occupational Safety and Health Administration (OSHA). This is an emergency and requires action to protect every worker, yet OSHA, without substantial evidence, refuses to acknowledge that every worker is endangered by this disease that is borne in the air and breathed in, or the virus is airborne.[15]

When looking at who is at grave risk, OSHA initially wrote in the proposed emergency temporary standard (draft ETS) that virtually all workers are at grave danger, yet in a sudden change, implemented an emergency temporary standard (ETS) that does not accept that virtually all workers are at grave danger. But cases have not disproportionately hit healthcare workers. Despite having about 15 million healthcare

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[11] Hawkins, L., & Campa, A. (2021, July 16). *Covid-19 School Mandates for Masks, Vaccines Are Blocked in More States*. The Wall Street Journal. https://www.wsj.com/articles/covid-19-school-mandates-for-masks-vaccines-are-blocked-in-more-states-11626433201.

[12] Sandman, P. M. (2021, July 16). *With current mask guidance, we're no longer all in this together*. STAT. https://www.statnews.com/2021/07/16/since-the-cdcs-mid-may-guidance-on-wearing-masks-were-no-longer-all-in-this-together/.

[13] Farinholt, T., Doddapaneni, H., Qin, X., Menon, V., Meng, Q., Metcalf, G., Chao, H., Gingras, M.-C., Farinholt, P., Agrawal, C., Muzny, D. M., Piedra, P. A., Gibbs, R. A., & Petrosino, J. (2021). *Transmission event of SARS-CoV-2 Delta variant reveals multiple vaccine breakthrough infections.* https://doi.org/10.1101/2021.06.28.21258780

[14] About OSHA | Occupational Safety and Health Administration. (n.d.). https://www.osha.gov/aboutosha.

[15] https://downloads.regulations.gov/OSHA-2020-0004-1034/attachment_1.pdf

workers in healthcare occupations[16] which constitute about 7.5% of the nearly 206 million Americans of working age[17], the CDC can only give 515,282 cases among healthcare workers,[18] meaning less than one in ten of those who tested positive, where healthcare employment status is known, are healthcare workers. And even though over 3,600 healthcare workers died from the virus[19] in a year based on nearly 100,000 deaths among Americans who are from ages 18 to 64,[20]

The reasoning behind the particularly elevated risk in paragraph 3 of this section adds to the paragraph on pages 4-5 of the draft ETS, which can be found at https://downloads.regulations.gov/OSHA-2020-0004-1106/attachment_2.pdf, intended to protect all workers, which was submitted with the first supplemental letter I sent, compared to the ETS. OSHA decided to single out a subset of workers for special protection. While all workers are at grave risk from the virus, without substantial evidence, OSHA limited the protections to healthcare workers and healthcare support personnel. And while this risk can be found in any setting where workers interact with others at work, OSHA limited these protections to healthcare settings. Then, OSHA decided to narrow that subset of settings and exclude from coverage a large subset of settings, drastically reducing who is covered. OSHA summarize this with a claim that "Workers face a particularly elevated risk of exposure to SARS-CoV-2 in settings where

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[16] Laughlin, L., Anderson, A., Martinez, A., & Gayfield, A. (2021, April 5). *Who Are Our Health Care Workers?* The United States Census Bureau. https://www.census.gov/library/stories/2021/04/who-are-our-health-care-workers.html.

[17] Organization for Economic Co-operation and Development, Working Age Population: Aged 15-64: All Persons for the United States [LFWA64TTUSM647S], retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/LFWA64TTUSM647S, July 8, 2021.

[18] Centers for Disease Control and Prevention (CDC). (2021, July 8). *Cases & Deaths among Healthcare Personnel*. https://covid.cdc.gov/covid-data-tracker/#health-care-personnel.

[19] Spencer, J., Jewett, C. (2021, April 8). *12 Months of Trauma: More Than 3,600 US Health Workers Died in Covid's First Year.* Kaiser Health News. https://khn.org/news/article/us-health-workers-deaths-covid-lost-on-the-frontline/.

[20] Centers for Disease Control and Prevention (CDC). (2021, July 8). *Demographic Trends of COVID-19 cases and deaths in the US reported to CDC.* https://covid.cdc.gov/covid-data-tracker/#demographics.

patients with suspected or confirmed COVID-19 receive treatment or where patients with undiagnosed illnesses come for treatment (e.g., emergency rooms, urgent care centers), especially when providing care or services directly to those patients." While this assumption may seem appropriate, OSHA throughout this lengthy proposal has made claims that seem apparently accurate on the face or the law to support their argument, but in reality, are not.

While this has been discussed in my first submission to OSHA ("my petition"), which can be found at docket number OSHA-2020-0004-1034, due to subsequent developments, even stronger action is needed. While OSHA concluded that the general duty clause was inadequate to protect workers in the draft ETS, they limited this without any basis to those workers who are covered by the ETS, by adding the words, "for employees covered by this ETS." And notwithstanding the actions that states have taken, which has been divergent, they limit from "employees in all states" as described on page 5 of the draft ETS to "healthcare employees".

OSHA accepts the "promise of the vaccines to protect workers" but refuses to acknowledge that unvaccinated workers are not disproportionately located in healthcare.[21] Low income, for example, is tied to not being vaccinated.[22] The Department of Veterans Affairs has mandated the vaccine for some workers.[23] And major medical groups support mandatory vaccination for healthcare workers.[24] When

[21] Raifman, J., Skinner, A., Michaels, D. (2021, June 30). *Something to celebrate: delivering vaccines to essential workers.* STAT. https://www.statnews.com/2021/07/01/essential-workers-getting-vaccinated-something-to-celebrate/.
[22] Herman, B. (2021, July 12). Most unvaccinated people have low incomes. Axios. https://www.axios.com/covid-vaccines-low-income-poor-workers-58698275-0451-4158-a967-37189dbf673c.html.
[23] Department of Veterans Affairs. (2021, July 26). VA mandates COVID-19 vaccines among its medical employees including VHA facilities staff. https://www.va.gov/opa/pressrel/pressrelease.cfm?id=5696.
[24] AMA in support of COVID-19 vaccine mandates for health care workers. American Medical Association. (2021, July 26).

OSHA cites that a quarter of healthcare workers have not gotten vaccinated, they ignore that for healthcare support personnel, vaccination rates are higher compared to the average worker, as of the time the claim was issued.[25]

In paragraph 5 of section I of the ETS, OSHA states that overlapping controls are needed. “More specifically, the agency's analysis demonstrates that an effective COVID-19 control program must utilize a suite of overlapping controls in a layered approach to protect workers from workplace exposure to SARS-CoV-2. OSHA emphasizes that the infection control practices required by the ETS are most effective when used together; however, they are also each individually protective.”[26] This suite of overlapping controls is in direct contrast with the guidance for general industry which states “Except for workplace settings covered by OSHA's ETS and mask requirements for public transportation, most employers no longer need to take steps to protect their workers from COVID-19 exposure in any workplace, or well-defined portions of a workplace, where all employees are fully vaccinated.”[27] This contradiction means that some reasons which were comprehensively refuted in my petition, which is a foreshadowing of the rest of the ETS.

But what OSHA should make clear is that all workers are in grave danger and major, yet readily feasible, steps can be taken to reduce the spread of the virus and

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https://www.ama-assn.org/press-center/press-releases/ama-support-covid-19-vaccine-mandates-health-care-workers.

[25] King, WC, et al., (2021, April 24). *COVID-19 vaccine hesitancy January-March 2021 among 18-64 year old US adults by employment and occupation.* medRxiv; https://www.medrxiv.org/content/10.1101/2021.04.20.21255821v3.

[26] 86 FR 32377

[27] Department of Labor. (2021, June 10). *Protecting Workers: Guidance on Mitigating and Preventing the Spread of COVID-19 in the Workplace | Occupational Safety and Health Administration.* https://www.osha.gov/coronavirus/safework.

protect workers. The layers of protection should be added up upon each other, in a manner that complies with the statutory requirements to be feasible[28].

II. History of COVID-19

A. COVID-19 is Serious

The history of the pandemic caused by a novel coronavirus, which is Severe Acute Respiratory Syndrome CoronaVirus 2.0 (SARS-CoV-2) that causes the coronavirus disease 2019 or "COVID-19" is tragic, and has caused incalculable harm. According to the World Health Organization (WHO), the number of cases globally as of July 9, 2021 exceeds one hundred eighty five million cases, and over four million deaths.[29] In the United States, we have had over thirty three million cases and over six hundred thousand deaths.[30] And we have had over half a million cases among healthcare workers in the United States[31] resulting in over three thousand healthcare workers dying from COVID-19.[32] The Office of National Statistics of the United Kingdom estimated that one in ten people who test positive have symptoms twelve weeks after testing positive.[33]

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[28] 9 U.S.C. §655(b)(5)
[29] World Health Organization. (2021, July 9). *WHO Coronavirus Disease (COVID-19) Dashboard*. https://covid19.who.int/table.
[30] Centers for Disease Control and Prevention (CDC). (2021, July 9). *COVID data tracker. Trends in number of COVID-19 cases and deaths in the US reported to CDC, by state/territory: Trends in Total COVID-19 Deaths in the United States Reported to CDC.* https://covid.cdc.gov/covid-data-tracker/#trends_dailytrendscases.
[31] Centers for Disease Control and Prevention (CDC). (2021, July 9). *Cases & Deaths among Healthcare Personnel*. https://covid.cdc.gov/covid-data-tracker/#health-care-personnel.
[32] Spencer, J., Jewett, C. (2021, April 8). *12 Months of Trauma: More Than 3,600 US Health Workers Died in Covid's First Year.* Kaiser Health News. https://khn.org/news/article/us-health-workers-deaths-covid-lost-on-the-frontline/.
[33] The prevalence of long COVID symptoms and COVID-19 complications. The prevalence of long COVID symptoms and COVID-19 complications - Office for National Statistics. (2020, December 16).

The economy in the United States shrunk by over three percent in 2020, the largest decrease in seventy-four years.[34] Furthermore, economic growth has been tied to using an elimination strategy, not a mitigation strategy.[35] While the origin of the virus matters, in the view of Doctor Scott Gottlieb, the twenty-third Commissioner of the Food and Drug Administration, (FDA) this is not because of controlling the current virus. “People ask why the question of COVID's origin matters at this point, since it won't impact how we address the pandemic. We already know what we need to know about how this virus behaves. But it does matter, a lot: because it impacts how we address risks of future pandemics.”[36] I do not believe it is necessary to use circular reasoning to rely on the risks of a future virus based on the origin of the current virus to determine whether a grave risk currently exists from SARS-CoV-2, the virus that causes COVID-19, and as a consequence, I decline to comment on the second and third paragraphs in this section. on another virus that may arise in the future based on the present virus.

On the final paragraph, notwithstanding that the vaccine has been distributed, the percentage who have received one dose varies from 85.3% in Vermont to 46.3% in Mississippi[37] as of July 1. And healthcare workers have lower vaccination hesitancy

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https://www.ons.gov.uk/news/statementsandletters/theprevalenceoflongcovidsymptomsandcovid19complications.

[34] Crutsinger, M. (2021, January 28). US economy shrank 3.5% in 2020 after growing 4% last quarter. AP NEWS. https://apnews.com/article/us-economy-shrink-in-2020-b59f9be06dcf1da924f64afde2ce094c.

[35] Oliu-Barton, M., Pradelski, B. S., Aghion, P., Artus, P., Kickbusch, I., Lazarus, J. V., Sridhar, D., & Vanderslott, S. (2021). SARS-CoV-2 elimination, not mitigation, creates best outcomes for health, the economy, and civil liberties. *The Lancet*, 397(10291), 2234–2236. https://doi.org/10.1016/s0140-6736(21)00978-8

[36] https://twitter.com/scottgottliebmd/status/1412382840419930118?s=21

[37] Fry, E., & Rapp, N. (2021, July 2). COVID vaccination rate by state. See if your state met Biden's goal. Fortune. https://fortune.com/2021/07/02/america-wont-make-bidens-july-4-covid-vaccine-goal-see-which-states-will/.

rates compared to the average worker.[38] OSHA stated on page 7 of the draft ETS that "Workers in every industry sector in the U.S. have been, and continue to be, impacted by COVID-19. Because SARS-CoV-2 can be transmitted wherever people gather, many workplaces provide an environment where the virus can spread."[39] While OSHA states "workers in healthcare settings where COVID-19 patients are treated continue to have regular exposure to SARS-CoV-2 and any variants that develop, they remain at an elevated risk of contracting COVID-19 …" this conclusion that higher exposure creates risk ignores that certain tools, particularly respirators, can eliminate entirely that elevated risk.[40]

B. Major Actions are Needed

Despite the WHO and other local public health authorities department recommending due to variants even if vaccinated[41], stating that vaccinated people should continue to wear masks, the CDC updated its guidance on schools to state vaccinated individuals do not need to wear masks.[42] The City of Los Angeles, due to the variants, reinstated their mask mandate effective July 18, 2021[43]. The CDC and FDA

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[38] King, WC, et al., (2021, April 24). *COVID-19 vaccine hesitancy January-March 2021 among 18-64 year old US adults by employment and occupation.* medRxiv; https://www.medrxiv.org/content/10.1101/2021.04.20.21255821v3.
[39] https://downloads.regulations.gov/OSHA-2020-0004-1106/attachment_2.pdf
[40] Oksanen, L. A., Sanmark, E., Oksanen, S. A., Anttila, V., Paterno, J. J., Lappalainen, M., Lehtonen, L., and Geneid, A. (2021). Sources of healthcare workers' COVID-19 infections and related safety guidelines. *International Journal of Occupational Medicine and Environmental Health*, 34(2), pp.239-249. https://doi.org/10.13075/ijomeh.1896.01741
[41] Associated Press. (2021, June 29). LA County recommends indoor masks, regardless of vaccines. New York Post. https://nypost.com/2021/06/29/la-county-recommends-indoor-masks-regardless-of-vaccines/.
[42] Centers for Disease Control and Prevention. (2021, July 9). Guidance for COVID-19 Prevention in Kindergarten (K)-12 Schools. Centers for Disease Control and Prevention. https://www.cdc.gov/coronavirus/2019-ncov/community/schools-childcare/k-12-guidance.html.
[43] Moon, S. (2021, July 16). *Los Angeles County to reinstate mask mandate amid rise in Covid-19 cases and hospitalizations.* CNN. https://www.cnn.com/2021/07/16/us/los-angeles-county-mask-mandate/index.html.

jointly issued a statement that a booster shot is not needed as vaccinated individuals are protected from severe risk and death[44] a day after Doctor Michael Ryan, the Director of the WHO Emergencies Programme, said "This virus is evolving, this virus is changing and we need to be very, very careful at this moment so that the gains that have been hard-won by the behaviours and action of our population are sustained and that we gain the benefit collectively of all of that effort. So individual behaviour and government support to that behaviour; extremely important and I would urge extreme caution in the complete lifting of public health and social measures at this time because there are consequences for that."[45] The data as presented in my petition, the draft ETS, and my first supplemental letter demonstrates why healthcare settings covered by the ETS are not inherently different from other workplaces to such an extent that all workers are not at a grave risk. Given that, the question is whether vaccines alone are enough? Doctor Maria Van Kerkhove, the Technical Lead on COVID-19 from the WHO, tweeted "Allowing #SARSCoV2 to spread & infect others by not implementing consistently proven actions that prevent infections, reduce spread, prevent disease & save lives is immoral, unethical, & non-scientific."[46]

The variants[47], as described by Greta Fox from the COVID Action Group, particularly the B.1.617.2 variant, makes the vaccine only strategy insufficient. Cases have started to increase, so that even as we have many vaccinated, cases rose over

[44] Health and Human Services Press Office. (2021, July 8). Joint CDC and FDA Statement on Vaccine Boosters. HHS.gov. https://www.hhs.gov/about/news/2021/07/08/joint-cdc-and-fda-statement-vaccine-boosters.html.
[45] World Health Organization. (2021, July 7). COVID-19 Virtual Press conference transcript - 7 July 2021. World Health Organization. https://www.who.int/publications/m/item/covid-19-virtual-press-conference-transcript---7-july-2021.
[46] https://twitter.com/mvankerkhove/status/1413589414907981829?s=20
[47] Fox, G. (2021, July 8). Delta Variant: Vaccine Effectiveness and the Path to Preventing Further Infections. Covid Action Group. https://covidactiongroup.net/delta-variant-mask-up.

thirty thousand by July 13, 2021,[48] and hospitalizations due to COVID-19 have increased dramatically.[49] In addition, due to variants that can produce additional virions in the respiratory tract, such as B.1.617.2, which is estimated to be a thousand times greater.[50] Another factor is that since the current vaccines are administered intramuscularly, the effectiveness of the vaccine against infection and mild cases may decline over time.[51] Finally, public health has been assaulted with many states implementing measures opposing vaccination mandates.[52] For these and other reasons, I will be requesting additional measures be implemented.

However, what is clear is that toleration of the spread of COVID-19 is unacceptable. It is not in dispute that SARS-CoV-2 is highly transmissible. This can be compared to varicella[53]. But while most of the US has been affected by COVID-19, not all the territories have been affected through community spread and morbidity as American Samoa has not had significant numbers of COVID cases.[54] Hospitalizations

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[48] Rovella, D. (2021, July 12). *Your Evening Briefing: U.S. Covid Cases Spike Most Since April 2020.* Bloomberg.com. https://www.bloomberg.com/news/newsletters/2021-07-12/evening-briefing-newsletter-u-s-covid-cases-up-most-since-april-2020.

[49] O'Donnell, T. (2021, July 12). U.S. COVID-19 hospitalizations are ticking up again as Delta variant spreads. The Week. https://theweek.com/coronavirus/1002516/us-covid-19-hospitalizations-are-ticking-up-again-as-delta-variant-spreads.

[50] Lu, J et. all. (2021, July 7). *Viral infection and transmission in a large well-traced outbreak caused by the Delta SARS-CoV-2 variant.* Virological. https://virological.org/t/viral-infection-and-transmission-in-a-large-well-traced-outbreak-caused-by-the-delta-sars-cov-2-variant/724.

[51] Lund, F. E., & Randall, T. D. (2021, July 23). Scent of a vaccine. Science, 373(6553), 397–399. https://doi.org/10.1126/science.abg9857

[52] Drees, J. (2031, July 3). Vaccine passports: 50 states WITH BANS, limitations & green lights. Becker's Hospital Review. https://www.beckershospitalreview.com/digital-transformation/vaccine-passports-10-states-with-bans-limitations-green-lights.html.

[53] LeBlanc, P., Fox, M., & Cohen, E. (2021, July 30). CDC document warns Delta variant appears to spread as easily as chickenpox and cause more severe infection. CNN. https://www.cnn.com/2021/07/29/politics/cdc-masks-covid-19-infections/index.html.

[54] Lina Stolyar, Kendal Orgera, & Robin Rudowitz. (2021, May 18). Challenges in the U.S. Territories: COVID-19 and the Medicaid Financing Cliff. Kaiser Family Foundation. https://www.kff.org/coronavirus-covid-19/issue-brief/challenges-in-the-u-s-territories-covid-19-and-the-medicaid-financing-cliff/.

have risen in July of 2021, largely due to variants, especially the B.1.617.2 variant.[55] Our public health system at the state and local level has not worked to effectively test, trace, and isolate before the variants.[56] As can be seen in early August of 2021, a surge of cases and hospitalizations does not only mean that it negatively affects patients who have COVID-19, but prevents hospitals from providing any patient adequate care[57]. A surge in patients with COVID-19 is leading to burnout, particularly among registered nurses, causing bedside nurses even more overwhelmed.[58] This downward spiral needs to be stopped to protect the healthcare system.

III. Pertinent Legal Authority

A. General Legal Authority

In enacting the Occupational Health and Safety Act of 1970 (OSH Act), the Congress found “personal injuries and illnesses arising out of work situations impose a substantial burden upon, and are a hindrance to, interstate commerce in terms of lost production, wage loss, medical expenses, and disability compensation payments.”[59] This accurately describes some of the burden caused to the economy from the

[55] O'Donnell, T. (2021, July 12). U.S. COVID-19 hospitalizations are ticking up again as Delta variant spreads. The Week. https://theweek.com/coronavirus/1002516/us-covid-19-hospitalizations-are-ticking-up-again-as-delta-variant-spreads.
[56] Banco, E. (2021, August 15). Inside America's Covid-reporting breakdown. POLITICO. https://www.politico.com/news/2021/08/15/inside-americas-covid-data-gap-502565.
[57] Roodruff, E. (2021, August 2). Louisiana set to break record For COVID hospitalizations: 'health care delivery is IN PERIL'. NOLA.com. https://www.nola.com/news/coronavirus/article_eae225d8-f3bc-11eb-ad2a-97b7916bd021.html.
[58] Eldridge, E. (2021, July 23). Pandemic leads to health care worker burnout, career changes, hospital staffing issues. Georgia Public Broadcasting. https://www.gpb.org/news/2021/07/23/pandemic-leads-health-care-worker-burnout-career-changes-hospital-staffing-issues.
[59] 29 U.S.C. §651(a)

pandemic. Working hours lost globally in 2020 was estimated by the International Labour Organization estimated at 8.8%, which was four times worse compared to the 2009 financial crisis,[60] causing wage loss. It has been estimated that two hundred thousand small businesses closed due to the pandemic[61] which would indicate a decrease in worker productivity. The medical expenses of rehabilitation are substantial, even if you only consider patients with Post-Acute Sequelae of SARS-CoV-2 infection (long COVID). It has been recently published in the CDC Morbidity and Mortality Weekly Report that, "Among patients referred to outpatient rehabilitation, those recovering from COVID-19 had poorer physical health and functional status than those who had cancer, or were recovering from cancer but not COVID-19."[62] And while limitations exist in that study, OSHA should note that "patients in the post–COVID-19 group were younger and more commonly employed than were those in the control group". The finding of Congress in 1970 acutely describes some of the consequences of the current pandemic.

While the legal analysis cited by OSHA in this section, is what the standard legal determinations are subjected to. As stated by the Fifth Circuit in *American Petroleum Institute v. OSHA*, the judgement of which was affirmed by the Supreme Court, "As this court stated in assessing an emergency temporary standard in Florida Peach Growers,

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[60] International Labour Organization. (2021, January 25). *ILO Monitor: COVID-19 and the world of work. Seventh edition Updated estimates and analysis.* https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/documents/briefingnote/wcms_767028.pdf.

[61] Simon, R. (2021, April 16). *Covid-19's Toll on U.S. Business? 200,000 Extra Closures in Pandemic's First Year.* The Wall Street Journal. https://www.wsj.com/articles/covid-19s-toll-on-u-s-business-200-000-extra-closures-in-pandemics-first-year-11618580619.

[62] Rogers-Brown JS, Wanga V, Okoro C, et al. Outcomes Among Patients Referred to Outpatient Rehabilitation Clinics After COVID-19 diagnosis — United States, January 2020–March 2021. MMWR Morb Mortal Wkly Rep 2021;70. DOI: http://dx.doi.org/10.15585/mmwr.mm7027a2.

'it seems clear that even with the required substantial evidence test, our review basically must determine whether the Secretary carried out his essentially legislative task in a manner reasonable under the state of the record before him.' This includes, of course, a review of whether the Secretary exercised his decisionmaking power within the limits imposed by Congress."[63]

The Supreme Court in *Chevron U.S.A. Inc. v. National Resources Defense Council*[64] described the two part test which is that "if the statute is silent or ambiguous with respect to the specific issue, the question for the court is whether the agency's answer is based on a permissible construction of the statute." [65] In footnote nine, the Supreme Court noted that "If a court, employing traditional tools of statutory construction, ascertains that Congress had an intention on the precise question at issue, that intention is the law and must be given effect."[66] The plurality held
In reviewing facts for substantial evidence, the Fifth Circuit stated "The manner in which the Commission has acted is important, not only because § 553 procedural rules apply, but also because Commission procedure above and beyond those rules has a vital influence on judicial weighing of record facts. For example, the Court will defer to Commission fact-finding expertise, but it can do so only when the record shows the Commission has made an actual judgment concerning the significance of the evidence."[67]

Furthermore, OSHA cannot simply ignore one piece of statutory provision or ignore the statutory purposes that Congress has set. While I did not in sections I and II

[63] *American Petroleum Institute v. OSHA*, 581 F.2d 493 (5th Cir. 1978) *affirmed* 448 U.S. 607 (1980) (internal citations omitted)
[64] 467 U.S. 837 (1984)
[65] *id.* at 843
[66] *id.*
[67] *Aqua Slide `N' Dive v. Consumer Product Safety*, 569 F.2d 831, 838 (5th Cir. 1978)

of this submission attempt to describe the legal inaccuracies, various statutory provisions in subsequent provisions.

B. Deference to the CDC

In reviewing the ruling of OSHA, courts of appeal will be required to determine if substantial evidence exists under 29 U.S.C. §655(f). In *Biestek v. Berryhill*, the Supreme Court analyzed a statute where "[t]he agency's factual findings on that score are 'conclusive' in judicial review of the benefits decision so long as they are supported by 'substantial evidence'." [68] The Supreme Court held that while the supporting data is not required in all cases, "a different (maybe less qualified) expert failing to produce such data might offer testimony that is so feeble, or contradicted, that it would fail to clear the substantial-evidence."[69]

As to statistical evidence, such as cases, hospitalizations, vaccinations, and deaths, subject to the limitations of subsequent data being reported by the CDC and occupational status not being collected frequently enough, I agree the CDC data constitutes substantial evidence. As to breakthrough cases not resulting from hospitalization or death, specifically breakthrough infection or long COVID, since the CDC is not tracking such data[70], that would not constitute substantial evidence.

In terms of the scientific guidance, specifically the question on how SARS-CoV-2 spreads is a prime example of how changes occur. CDC guidance on transmission has

[68] 139 S. Ct. 1148, 1152 (2019)
[69] *Id. at 1155*
[70] Richmendezcnbc. (2021, July 28). CDC needs to start tracking all Covid breakthrough infections, Gottlieb says. CNBC. https://www.cnbc.com/2021/07/28/cdc-needs-to-start-tracking-all-covid-breakthrough-infections-gottlieb-says.html.

been updated on June 16, 2020, September 18, 2020, September 21, 2020, October 5, 2020, October 28, 2020, May 7, 2021, May 10, 2021, May 13, 2021, and July 14, 2021.[71]

The CDC said that the virus spread in June 16, 2020 mainly person to person between people in close contact, or 6 feet, “through respiratory droplets when an infected person coughs, sneezes, or talks.”[72] The droplets then can “land in the mouth or nose of people who are nearby or possibly be inhaled into the lungs” and it may be spread without symptoms. On September 18, 2020, the CDC made the guidance into “respiratory droplets or small particles, such as those in aerosols, produced when an infected person coughs, sneezes, sings, talks, or breathes”[73] as the main method of spread. They also added transmission through touch from droplets falling and landing on surfaces as another method and referenced the droplets and aerosols remaining suspended and traveling over six feet. The September 18 guidance on the virus being airborne was retracted, likely for political reasons, the guidance on asymptomatic people not getting tested was withdrawn, only to be reinstated[74].

On October 5, 2020, the CDC issued guidance that the respiratory droplets can be inhaled or deposited into the mucous membranes, airborne transmission beyond six

[71] Centers for Disease Control and Prevention. (n.d.). How COVID-19 spreads. https://web.archive.org/web/*/https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/how-covid-spreads.html.
[72] Centers for Disease Control and Prevention. (2020, June 16). How COVID-19 spreads. https://web.archive.org/web/20200623005825/https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/how-covid-spreads.html
[73] Centers for Disease Control and Prevention. (2020, September 18). How COVID-19 spreads.https://web.archive.org/web/20200919033706/https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/how-covid-spreads.html
[74] Jaffe, S. (2020). Media reports REVEAL political interference at the US CDC. The Lancet, 396(10255), 875. https://doi.org/10.1016/s0140-6736(20)32002-x

feet is sometimes possible, or land on surfaces.[75] So both the surfaces and the dilution in air are the reasons the CDC gave for the decreased risk. They added touch is not a common way of spreading the virus. On October 28, the CDC slightly modified the guidance by adding that cases of reinfection are reported, but are rare.[76]

The guidance was substantially modified on May 7, removing the term "respiratory droplets". This also reclassified transmission into the mode the person is infected by, which the CDC reclassified the guidance into three ways: breathing in the virus, the virus landing onto the mucous membranes (specifically the eyes, nose, and mouth), and touching your mucous membranes with hands containing the virus. They classified breathing in the virus as common within six feet but uncommon outside of that distance, droplets landing on your mucous membranes as common, and transmission via touching your face as uncommon.[77] The common and uncommon language was quickly retracted on May 10, and the guidance on May 13 was adding a hyperlink for ventilation. On July 14, the CDC deleted the language on reinfection and other controls for each mode of transmission.[78]

The decision on mode of transmission, as a consequence, is guided by the physics of aerosols. Since the guidance on how COVID-19 spreads does not cover this

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[75] Centers for Disease Control and Prevention. (2020, October 5). How COVID-19 spreads. https://web.archive.org/web/20201006004016/https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/how-covid-spreads.html.

[76] Centers for Disease Control and Prevention. (2020, October 28). How COVID-19 spreads. https://web.archive.org/web/20201029011657/https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/how-covid-spreads.html.

[77] Centers for Disease Control and Prevention. (2021, May 7). How COVID-19 spreads. https://web.archive.org/web/20210508003348/https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/how-covid-spreads.html.

[78] Centers for Disease Control and Prevention. (2021, July 14). How COVID-19 spreads. https://web.archive.org/web/20210715175827/https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/how-covid-spreads.html.

aspect, and is contradicted by the ventilation in building guidance, it is not entitled to deference[79]

On the application to healthcare workers, OSHA split workers up into three classifications: exempt category, general category, and healthcare category. All workers and workplaces covered by the OSH Act were classified into the general unless they were covered by the healthcare category or the exempt category. The exempt category was narrow, covering two cases: when one employee is present and no other person might be in the workplace, or if exclusively working from home. The exempt category would supersede the healthcare category due to this reason.

Workers who are not in the exempt category were placed into the healthcare category in “all settings where any employee” (1) provide healthcare services or healthcare support services, in settings where patients may be present (2) handles human remains or contaminated materials, or (3) conducts biomedical laboratory operations involving handling things related to COVID-19, including animals exposed to the virus or vaccines). First aid by unlicensed providers is excluded due to not being economically feasible. Dispensing prescriptions in retail settings is excluded on the grounds that it is similar to other retail work. In settings where healthcare settings are in non healthcare locations, including an office where all tenants are healthcare, each office is a separate healthcare setting, while an entire nursing home is a single setting.

The ETS first decided to narrow the application. First, the biomedical research component, contaminated material rule, and human remains provision were limited to autopsies. Second, ambulatory care sites and home healthcare settings, including well

[79] Centers for Disease Control and Prevention. (2021, June 2). *Ventilation in Buildings.* https://www.cdc.gov/coronavirus/2019-ncov/community/ventilation.html.

defined hospital settings, where non-employees are screened, suspect or confirmed COVID patients are not admitted, and in the case of hospital and home healthcare settings, every employee is fully vaccinated, are excluded. Both of these cases were moved into the general category effectively. Finally, OSHA declined to regulate the general category, but uses advisory guidance. OSHA cannot rely on a CDC letter that states that vaccinated workers in healthcare are at risk from COVID-19 to say that non healthcare workers are not at grave danger.

C. Specific Statutory Provisions

The following statutory provisions must be considered by OSHA:

1. 29 U.S.C. § 651(b)

(b) The Congress declares it to be its purpose and policy, through the exercise of its powers to regulate commerce among the several States and with foreign nations and to provide for the general welfare, to assure so far as possible every working man and woman in the Nation safe and healthful working conditions and to preserve our human resources-

> (1) by encouraging employers and employees in their efforts to reduce the number of occupational safety and health hazards at their places of employment, and to stimulate employers and employees to institute new and to perfect existing programs for providing safe and healthful working conditions;

(2) by providing that employers and employees have separate but dependent responsibilities and rights with respect to achieving safe and healthful working conditions;

(3) by authorizing the Secretary of Labor to set mandatory occupational safety and health standards applicable to businesses affecting interstate commerce, and by creating an Occupational Safety and Health Review Commission for carrying out adjudicatory functions under this chapter;

(4) by building upon advances already made through employer and employee initiative for providing safe and healthful working conditions;

(5) by providing for research in the field of occupational safety and health, including the psychological factors involved, and by developing innovative methods, techniques, and approaches for dealing with occupational safety and health problems;

(6) by exploring ways to discover latent diseases, establishing causal connections between diseases and work in environmental conditions, and conducting other research relating to health problems, in recognition of the fact that occupational health standards present problems often different from those involved in occupational safety;

(7) by providing medical criteria which will assure insofar as practicable that no employee will suffer diminished health, functional capacity, or life expectancy as a result of his work experience;

(8) by providing for training programs to increase the number and competence of personnel engaged in the field of occupational safety and health;

(9) by providing for the development and promulgation of occupational safety and health standards;

(10) by providing an effective enforcement program which shall include a prohibition against giving advance notice of any inspection and sanctions for any individual violating this prohibition;

(11) by encouraging the States to assume the fullest responsibility for the administration and enforcement of their occupational safety and health laws by providing grants to the States to assist in identifying their needs and responsibilities in the area of occupational safety and health, to develop plans in accordance with the provisions of this chapter, to improve the administration and enforcement of State occupational safety and health laws, and to conduct experimental and demonstration projects in connection therewith;

(12) by providing for appropriate reporting procedures with respect to occupational safety and health which procedures will help achieve the objectives of this chapter and accurately describe the nature of the occupational safety and health problem;

(13) by encouraging joint labor-management efforts to reduce injuries and disease arising out of employment.

2. 29 U.S.C. §654

§654. Duties of employers and employees

(a) Each employer-

(1) shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees;

(2) shall comply with occupational safety and health standards promulgated under this chapter.

(b) Each employee shall comply with occupational safety and health standards and all rules, regulations, and orders issued pursuant to this chapter which are applicable to his own actions and conduct.

3. 29 U.S.C. §655. Standards

§655. Standards

(a) Promulgation by Secretary of national consensus standards and established Federal standards; time for promulgation; conflicting standards

Without regard to chapter 5 of title 5 or to the other subsections of this section, the Secretary shall, as soon as practicable during the period beginning with the effective date of this chapter and ending two years after such date, by rule promulgate as an occupational safety or health standard any national consensus standard, and any established Federal standard, unless he determines that the promulgation of such a standard would not result in improved safety or health for specifically designated employees. In the event of conflict among any such standards, the Secretary shall promulgate the standard which assures the greatest protection of the safety or health of the affected employees.

(b) Procedure for promulgation, modification, or revocation of standards

The Secretary may by rule promulgate, modify, or revoke any occupational safety or health standard in the following manner:

(1) Whenever the Secretary, upon the basis of information submitted to him in writing by an interested person, a representative of any organization of employers or employees, a nationally recognized standards-producing organization, the Secretary of Health and Human Services, the National Institute for Occupational Safety and Health, or a State or political subdivision, or on the basis of information developed by the Secretary or otherwise available to him, determines that a rule should be promulgated in order to serve the objectives of this chapter, the Secretary may request the recommendations of an advisory committee appointed under section 656 of this title. The Secretary shall provide such an advisory committee with any proposals of his own or of the Secretary of Health and Human Services, together with all pertinent factual information developed by the Secretary or the Secretary of Health and Human Services, or otherwise available, including the results of research, demonstrations, and experiments. An advisory committee shall submit to the Secretary its recommendations regarding the rule to be promulgated within ninety days from the date of its appointment or within such longer or shorter period as may be prescribed by the Secretary, but in no event for a period which is longer than two hundred and seventy days.

(2) The Secretary shall publish a proposed rule promulgating, modifying, or revoking an occupational safety or health standard in the Federal Register and shall afford interested persons a period of thirty days after publication to submit

written data or comments. Where an advisory committee is appointed and the Secretary determines that a rule should be issued, he shall publish the proposed rule within sixty days after the submission of the advisory committee's recommendations or the expiration of the period prescribed by the Secretary for such submission.

(3) On or before the last day of the period provided for the submission of written data or comments under paragraph (2), any interested person may file with the Secretary written objections to the proposed rule, stating the grounds therefor and requesting a public hearing on such objections. Within thirty days after the last day for filing such objections, the Secretary shall publish in the Federal Register a notice specifying the occupational safety or health standard to which objections have been filed and a hearing requested, and specifying a time and place for such hearing.

(4) Within sixty days after the expiration of the period provided for the submission of written data or comments under paragraph (2), or within sixty days after the completion of any hearing held under paragraph (3), the Secretary shall issue a rule promulgating, modifying, or revoking an occupational safety or health standard or make a determination that a rule should not be issued. Such a rule may contain a provision delaying its effective date for such period (not in excess of ninety days) as the Secretary determines may be necessary to insure that affected employers and employees will be informed of the existence of the standard and of its terms and that employers affected are given an opportunity to

familiarize themselves and their employees with the existence of the requirements of the standard.

(5) The Secretary, in promulgating standards dealing with toxic materials or harmful physical agents under this subsection, shall set the standard which most adequately assures, to the extent feasible, on the basis of the best available evidence, that no employee will suffer material impairment of health or functional capacity even if such employee has regular exposure to the hazard dealt with by such standard for the period of his working life. Development of standards under this subsection shall be based upon research, demonstrations, experiments, and such other information as may be appropriate. In addition to the attainment of the highest degree of health and safety protection for the employee, other considerations shall be the latest available scientific data in the field, the feasibility of the standards, and experience gained under this and other health and safety laws. Whenever practicable, the standard promulgated shall be expressed in terms of objective criteria and of the performance desired.

(6)

(A) Any employer may apply to the Secretary for a temporary order granting a variance from a standard or any provision thereof promulgated under this section. Such temporary order shall be granted only if the employer files an application which meets the requirements of clause (B) and establishes that

(i) he is unable to comply with a standard by its effective date because of unavailability of professional or technical personnel or

of materials and equipment needed to come into compliance with the standard or because necessary construction or alteration of facilities cannot be completed by the effective date,

(ii) he is taking all available steps to safeguard his employees against the hazards covered by the standard, and

(iii) he has an effective program for coming into compliance with the standard as quickly as practicable.

Any temporary order issued under this paragraph shall prescribe the practices, means, methods, operations, and processes which the employer must adopt and use while the order is in effect and state in detail his program for coming into compliance with the standard. Such a temporary order may be granted only after notice to employees and an opportunity for a hearing: Provided, That the Secretary may issue one interim order to be effective until a decision is made on the basis of the hearing. No temporary order may be in effect for longer than the period needed by the employer to achieve compliance with the standard or one year, whichever is shorter, except that such an order may be renewed not more than twice

(I) so long as the requirements of this paragraph are met and

(II) if an application for renewal is filed at least 90 days prior to the expiration date of the order.

No interim renewal of an order may remain in effect for longer than 180 days.

(B) An application for a temporary order under this paragraph (6) shall contain:

(i) a specification of the standard or portion thereof from which the employer seeks a variance,

(ii) a representation by the employer, supported by representations from qualified persons having firsthand knowledge of the facts represented, that he is unable to comply with the standard or portion thereof and a detailed statement of the reasons therefor,

(iii) a statement of the steps he has taken and will take (with specific dates) to protect employees against the hazard covered by the standard,

(iv) a statement of when he expects to be able to comply with the standard and what steps he has taken and what steps he will take (with dates specified) to come into compliance with the standard, and

(v) a certification that he has informed his employees of the application by giving a copy thereof to their authorized representative, posting a statement giving a summary of the application and specifying where a copy may be examined at the place or places where notices to employees are normally posted, and by other appropriate means.

A description of how employees have been informed shall be contained in the certification. The information to employees shall also inform them of their right to petition the Secretary for a hearing.

(C) The Secretary is authorized to grant a variance from any standard or portion thereof whenever he determines, or the Secretary of Health and Human Services certifies, that such variance is necessary to permit an employer to participate in an experiment approved by him or the Secretary of Health and Human Services designed to demonstrate or validate new and improved techniques to safeguard the health or safety of workers.

(7) Any standard promulgated under this subsection shall prescribe the use of labels or other appropriate forms of warning as are necessary to insure that employees are apprised of all hazards to which they are exposed, relevant symptoms and appropriate emergency treatment, and proper conditions and precautions of safe use or exposure. Where appropriate, such standard shall also prescribe suitable protective equipment and control or technological procedures to be used in connection with such hazards and shall provide for monitoring or measuring employee exposure at such locations and intervals, and in such manner as may be necessary for the protection of employees. In addition, where appropriate, any such standard shall prescribe the type and frequency of medical examinations or other tests which shall be made available, by the employer or at his cost, to employees exposed to such hazards in order to most effectively determine whether the health of such employees is adversely affected by such exposure. In the event such medical examinations are in the

nature of research, as determined by the Secretary of Health and Human Services, such examinations may be furnished at the expense of the Secretary of Health and Human Services. The results of such examinations or tests shall be furnished only to the Secretary or the Secretary of Health and Human Services, and, at the request of the employee, to his physician. The Secretary, in consultation with the Secretary of Health and Human Services, may by rule promulgated pursuant to section 553 of title 5, make appropriate modifications in the foregoing requirements relating to the use of labels or other forms of warning, monitoring or measuring, and medical examinations, as may be warranted by experience, information, or medical or technological developments acquired subsequent to the promulgation of the relevant standard.

(8) Whenever a rule promulgated by the Secretary differs substantially from an existing national consensus standard, the Secretary shall, at the same time, publish in the Federal Register a statement of the reasons why the rule as adopted will better effectuate the purposes of this chapter than the national consensus standard.

(c) Emergency temporary standards

(1) The Secretary shall provide, without regard to the requirements of chapter 5 of title 5, for an emergency temporary standard to take immediate effect upon publication in the Federal Register if he determines

(A) that employees are exposed to grave danger from exposure to substances or agents determined to be toxic or physically harmful or from new hazards, and

(B) that such emergency standard is necessary to protect employees from such danger.

(2) Such standard shall be effective until superseded by a standard promulgated in accordance with the procedures prescribed in paragraph (3) of this subsection.

(3) Upon publication of such standard in the Federal Register the Secretary shall commence a proceeding in accordance with subsection (b), and the standard as published shall also serve as a proposed rule for the proceeding. The Secretary shall promulgate a standard under this paragraph no later than six months after publication of the emergency standard as provided in paragraph (2) of this subsection.

(d) Variances from standards; procedure

Any affected employer may apply to the Secretary for a rule or order for a variance from a standard promulgated under this section. Affected employees shall be given notice of each such application and an opportunity to participate in a hearing. The Secretary shall issue such rule or order if he determines on the record, after opportunity for an inspection where appropriate and a hearing, that the proponent of the variance has demonstrated by a preponderance of the evidence that the conditions, practices, means, methods, operations, or processes used or proposed to be used by an employer will provide employment and places of employment to his employees which are as safe and healthful as those which would prevail if he complied with the standard. The rule or order so issued shall prescribe the conditions the employer must maintain, and the practices, means, methods, operations, and processes which he must adopt and utilize to the extent they differ from the standard in question. Such a rule or order

may be modified or revoked upon application by an employer, employees, or by the Secretary on his own motion, in the manner prescribed for its issuance under this subsection at any time after six months from its issuance.

(e) Statement of reasons for Secretary's determinations; publication in Federal Register

Whenever the Secretary promulgates any standard, makes any rule, order, or decision, grants any exemption or extension of time, or compromises, mitigates, or settles any penalty assessed under this chapter, he shall include a statement of the reasons for such action, which shall be published in the Federal Register.

(f) Judicial review

Any person who may be adversely affected by a standard issued under this section may at any time prior to the sixtieth day after such standard is promulgated file a petition challenging the validity of such standard with the United States court of appeals for the circuit wherein such person resides or has his principal place of business, for a judicial review of such standard. A copy of the petition shall be forthwith transmitted by the clerk of the court to the Secretary. The filing of such petition shall not, unless otherwise ordered by the court, operate as a stay of the standard. The determinations of the Secretary shall be conclusive if supported by substantial evidence in the record considered as a whole.

(g) Priority for establishment of standards

In determining the priority for establishing standards under this section, the Secretary shall give due regard to the urgency of the need for mandatory safety and health standards for particular industries, trades, crafts, occupations, businesses, workplaces or work environments. The Secretary shall also give due regard to the

recommendations of the Secretary of Health and Human Services regarding the need for mandatory standards in determining the priority for establishing such standards.

4. 29 U.S.C. §657(c)

(c) Maintenance, preservation, and availability of records; issuance of regulations; scope of records; periodic inspections by employer; posting of notices by employer; notification of employee of corrective action

(1) Each employer shall make, keep and preserve, and make available to the Secretary or the Secretary of Health and Human Services, such records regarding his activities relating to this chapter as the Secretary, in cooperation with the Secretary of Health and Human Services, may prescribe by regulation as necessary or appropriate for the enforcement of this chapter or for developing information regarding the causes and prevention of occupational accidents and illnesses. In order to carry out the provisions of this paragraph such regulations may include provisions requiring employers to conduct periodic inspections. The Secretary shall also issue regulations requiring that employers, through posting of notices or other appropriate means, keep their employees informed of their protections and obligations under this chapter, including the provisions of applicable standards.

(2) The Secretary, in cooperation with the Secretary of Health and Human Services, shall prescribe regulations requiring employers to maintain accurate records of, and to make periodic reports on, work-related deaths, injuries and illnesses other than minor injuries requiring only first aid treatment and which do not involve medical treatment, loss of consciousness, restriction of work or motion, or transfer to another job.

(3) The Secretary, in cooperation with the Secretary of Health and Human Services, shall issue regulations requiring employers to maintain accurate records of employee exposures to potentially toxic materials or harmful physical agents which are required to be monitored or measured under section 655 of this title. Such regulations shall provide employees or their representatives with an opportunity to observe such monitoring or measuring, and to have access to the records thereof. Such regulations shall also make appropriate provision for each employee or former employee to have access to such records as will indicate his own exposure to toxic materials or harmful physical agents. Each employer shall promptly notify any employee who has been or is being exposed to toxic materials or harmful physical agents in concentrations or at levels which exceed those prescribed by an applicable occupational safety and health standard promulgated under section 655 of this title, and shall inform any employee who is being thus exposed of the corrective action being taken.

5. 29 U.S.C. §657(d)

(d) Obtaining of information

Any information obtained by the Secretary, the Secretary of Health and Human Services, or a State agency under this chapter shall be obtained with a minimum burden upon employers, especially those operating small businesses. Unnecessary duplication of efforts in obtaining information shall be reduced to the maximum extent feasible.

IV. Rationale for the ETS

A. Grave or Substantial Danger

1. Introduction

a. Legal Standard

In defining what is an "occupational safety and health standard", the statute provides the definition that it “means a standard which requires conditions, or the adoption or use of one or more practices, means, methods, operations, or processes, reasonably necessary or appropriate to provide safe or healthful employment and places of employment.”[80] In order for OSHA to act, the Supreme Court held that “§ 3(8) [of the OSH Act][81] requires the Secretary to find, as a threshold matter, that the toxic substance in question poses a significant health risk in the workplace and that a new, lower standard is therefore ‘reasonably necessary or appropriate to provide safe or healthful employment and places of employment.’”[82]

The statute also requires issuance of an emergency temporary standard when the Secretary of Labor “determines that employees are exposed to grave danger from exposure to substances or agents determined to be toxic or physically harmful or from new hazards, and that such emergency standard is necessary to protect employees from such danger.”

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[80] 29 U.S.C. § 652(8)
[81] *id.*
[82] *Industrial Union Department v. American Petroleum Institute*, 448 U.S. 607, 614-15 (1980)

In order to determine whether an emergency temporary standard or a final standard is needed, I am recommending that OSHA use the following five prong test. This provides a logical order of steps for OSHA to consider the hazard, and these steps can be treated distinctly. I have described these prongs in subsections b, c, d, e, and f of section IV-A-1 of my brief. When this test is met, I believe OSHA should take action to issue a standard to protect workers from a hazard.

1. First, OSHA identifies harms that can occur from the specific hazard.
2. Second, OSHA must determine that those identified harms are severe enough to be covered by the OSH Act.
3. Third, OSHA calculates what levels of exposure are required to be put at such a danger.
4. Fourth, OSHA subsequently must determine whether workers are being exposed in the workplace to such dangerous levels of exposure.
5. Fifth, OSHA may decline to issue a rule for discretionary reasons.

In determining the scope of review, the decision of the United States Court of Appeals for the D.C. Circuit summarized the deference owed to OSHA. “While OSHA determinations which are essentially legislative and rooted in inferences from complex scientific and factual data are entitled to great deference, our review of the Assistant Secretary's refusal to issue an ETS for EtO exposure must take into account the mandatory language of 29 U.S.C. § 655(c) and the fact that the interests at stake are not merely economic interests in a license or a rate structure, but personal interests in life and health.”[83] In light of this standard, the determinations of OSHA as to each prong

[83] *Public Cit. Health Research Grp. v. Auchter*, 702 F.2d 1150, 1156 (D.C. Cir. 1983) [internal citations omitted]

are entitled to deference, but it must answer why workers are excluded using one factor or justify why workers are included by showing all factors apply. Finds on key questions are required to be reviewed for substantial evidence, which "means—and means only—such relevant evidence as a reasonable mind might accept as adequate to support a conclusion."[84]

b. Harms Caused by Hazard

On the severity of the hazard, the first question is what hazards are caused by the exposure. For example, in the benzene case, the Supreme Court noted "In the late 1960's and early 1970's a number of epidemiological studies were published indicating that workers exposed to high concentrations of benzene were subject to a significantly increased risk of leukemia."[85] I submit that the three hazards are death, hospitalization, and long COVID. While OSHA appears to use these hazards as well, I may describe these hazards slightly differently from OSHA. The harms are described in section IV-A-2-a of this brief.

c. Do the Harms Qualify under the OSH Act

The next question is whether the harms qualify under the OSH Act. This standard is not whether some risk exists. Rather, "the [OSH] Act implies that, before promulgating any standard, the Secretary must make a finding that the workplaces in question are not safe. But 'safe' is not equivalent of 'risk-free.' There are many activities that we engage in every day — such as driving a car or even breathing city air — that entail some risk of accident or material health impairment; nevertheless, few people would consider these

[84] *Biestek v. Berryhill*, 139 S. Ct. 1148, 1154 (2019) [internal citations omitted]
[85] *Industrial Union Department v. American Petroleum Institute*, 448 U.S. 607, 618 (1980)

activities ‘unsafe.’ Similarly, a workplace can hardly be considered ‘unsafe’ unless it threatens the workers with a significant risk of harm.”[86]

Some dangers have been found not to constitute grave harms. “From time to time a group of workers will experience nausea, excessive salivation and perspiration, blurred vision, abdominal cramps, vomiting, and diarrhea, in approximately that sequence. There is substantial evidence that farmworkers occupationally exposed to organophosphate residues on foliage may experience headache, fatigue, and vertigo. These are not grave illnesses, however, and do not support a determination of a grave danger.”[87] For a final rule, however, the standard is that the injuries cause a significant risk of harm, and not the grave danger required for the ETS.

In deciding this question, OSHA decided that “the mortality and morbidity risk to employees from COVID-19 is so dire that the grave danger from exposures to SARS-CoV-2 is clear.”[88] OSHA chose not to specify healthcare workers, but specified that the danger is grave to employees. I will discuss the three risks I described above, death, hospitalization, and long covid as well as cumulative risk in Section IV-A-2-a of this brief.

d. What Level of Exposure creates a Danger

The level of exposure is the next question, and it asks what levels of exposure are required to have such a risk. For many chemical airborne toxins, the question is how many parts per million of exposure, and for what duration, would be an exposure risk. For benzene, the Supreme Court asked about a “dose response curve” from industry

[86] *id.* at 642
[87] *Fla. Peach Grow. Ass'n v. U.S. Dept. of Lab*, 489 F.2d 120, 131 (5th Cir. 1974)
[88] 86 F.R. 32382

being rejected.[89] For the virus, the dose response curve is basically asking about the dose response curve for COVID-19 and the likelihood of being infected. This is because of the fact that a COVID-19 exposure is not cumulative in the sense that the danger is not long term damage, such as cancer, but happens in a short timeframe. And while time is needed in a quantitative risk assessment, “that type of analysis is not necessary in this situation”[90].

Given the nature of the virus, this question is based on whether a tolerance is acceptable. Due to the fact that the dose response risk for getting COVID-19 is discrete for each exposure, and not cumulative over a career in the way other hazards such as asbestos are cumulative, the question of what tolerance should be allowed is not appropriate. OSHA answered, similar to whether the risks from COVID-19 constitute a grave danger, this question in the affirmative. “Clearly, exposure to SARS-CoV-2 is a new hazard that presents a grave danger to workers in the U.S.”[91]

e. Are Employees Exposed to Unsafe Levels

This is basically asking the question as to whether the exposure levels are acceptable is slightly more tricky. OSHA is accurate that COVID-19 is not a uniquely work related hazard. The risk, while not required to be exclusively at work, has been held by the courts to require a connection to the workplace. In vacating the workplace noise rule, the Fourth Circuit held illegal the rule because “the amendment [to the rule meant] an employer whose workers are unaffected by workplace noise may be subject to numerous requirements simply because its workers choose to hunt, listen to loud

[89] *Industrial Union Department v. American Petroleum Institute*, 448 U.S. 607, 654 (1980)
[90] 86 F.R. 32411
[91] *id. at* 32382

music or ride motorcycles during their non-working hours."[92] As a consequence, the ability of employees to avoid COVID-19 outside of work is a factor OSHA cannot consider, notwithstanding paragraph 3 of section IV-A-I of the ETS[93].

In another case, the D.C. Circuit held "Given the substantial evidence of voluntary reduction in exposure levels and the predominantly lower levels reported in the available studies, a 10 ppm 'average' appears to us a reasonable assumption."[94] Nevertheless "[a]mple evidence in the record indicates a significant risk that some workers, who are actually being exposed to levels of [ethylene oxide] greater than the 10 [parts per million] "average" (yet within the 50 [parts per million] standard), currently encounter a potentially grave danger to both their health and the health of their progeny."[95] OSHA was consequently ordered to act and issue a final standard. For COVID-19, the question will simplify to whether the risk workers are exposed to regarding getting the virus at work is unacceptably high.

OSHA's determination as to why the ETS covers certain healthcare workers is based on the viewpoint that workplaces covered by the ETS are at an elevated risk unvaccinated workers are at risk. They substantially discuss this in section VIII-A of the ETS.[96] For unvaccinated individuals, the advisory OSHA guidance issued with the ETS states that it is "intended to assist employers in recognizing and abating hazards likely to cause death or serious physical harm as part of their obligation to provide a safe and healthful workplace."[97] This is a reference to the general duty clause which provides that

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[92] *Forging Industry Ass'n v. Secretary of Labor*, 748 F.2d 210, 214-15 (4th Cir. 1984)
[93] 86 F.R. 32381
[94] *Public Cit. Health Research Grp. v. Auchter*, 702 F.2d 1150, 1156 (D.C. Cir. 1983)
[95] *Id at 1157*
[96] 86 F.R. 32562-32567
[97] Department of Labor. *Protecting Workers: Guidance on Mitigating and Preventing the Spread of COVID-19 in the Workplace* | Occupational Safety and Health Administration. (2021, June 10). https://www.osha.gov/coronavirus/safework.

employers “shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees”.[98] While this is referring to the possibility that a significant risk may exist for unvaccinated workers, since OSHA did not concurrently issue a proposed rule outside of healthcare, such an assumption should not be made. I discuss the effects of vaccinations in section IV-A-2-c of my brief.

f. Do Other Factors Justify Not Issuing A Standard

OSHA can decline to issue an emergency temporary standard or a proposed or final rule for various reasons, but I believe that they can be broken down into two categories. Courts have respected that while OSHA can set its docket, it may not unreasonably delay issuing a rule. “We would hesitate to require the Assistant Secretary to expedite the EtO rulemaking if such a command would seriously disrupt other rulemakings of higher or competing priority.”[99] I do not believe that this sort of reasoning warrants a delay. Furthermore, it is unlikely that

OSHA cited two reasons for not issuing the ETS previously, which were that the General Duty Clause, found in section 5(a)(1) of the OSH Act[100] and other regulations that applied, and the need for flexibility for new knowledge about the virus and COVID-19.[101] The elevated risk in healthcare that forms the basis for distinguishing between where the OSHA ETS applies and where it does not is limited to settings where individuals who are suspected or confirmed to have COVID-19 and whom have not cleared quarantine or isolation are known to be present where respiratory protection

[98] 29 U.S.C. §654(a)(1)
[99] *Public Cit. Health Research Grp. v. Auchter*, 702 F.2d 1150, 1158 (D.C. Cir. 1983)
[100] *id.*
[101] 86 F.R. 36412-86413

is not worn.[102] Yet such a rule would consist of applying the requirement to wear respiratory protection as specified in 29 C.F.R. 1910.502(f)(2)(i) without the limitation to settings covered by the ETS. In order to implement such a requirement, it would also require in healthcare settings as early as practical, without interfering with patient care, to screen and triage for COVID-19 anyone entering and remaining in the workplace, based on 29 C.F.R. 1910.502(d)(2). The Fifth Circuit held that "[f]ear of a successful judicial challenge to enforcement of OSHA's permanent standard regarding respirator use hardly justifies resort to the most dramatic weapon in OSHA's enforcement arsenal."[103]

OSHA in section IV-B-II of the ETS declined to specify why these considerations do not apply in workplaces outside of healthcare. The D.C. Circuit has held OSHA is required "to identify relevant factual evidence, to explain the logic and the policies underlying any legislative choice, to state candidly any assumptions on which it relies, and to present its reasons for rejecting significant contrary evidence and argument."[104] I will consider this in section IV-B-2 of my brief.

g. Factors to Consider in Issuing a Regulation

OSHA should consider several factors, but I am not trying to be comprehensive in section IV-A-1-g of this brief. As OSHA has noted, we are in a public health emergency due to COVID-19. Cases are rising, as of July 10, 2021, in 42 states.[105] Subsequent to this surge in cases, by July 23, hospitalizations also surged upwards and

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[102] Mark Ferris, Rebecca Ferris, Chris Workman, et al. *FFP3 respirators protect healthcare workers against infection with SARS-CoV-2*. Authorea. June 30, 2021. https://www.authorea.com/doi/full/10.22541/au.162454911.17263721/v2.
[103] *Asbestos Information Ass'n v. O.S.H.A*, 727 F.2d 415, 426 (5th Cir. 1984)
[104] *United Steelworkers of Am., Etc. v. Marshall*, 647 F.2d 1189, 1207 (D.C. Cir. 1980)
[105] Newsnodes.com. (2021, July 10). *Newsnodes USA COVID-19 Monitor*. https://newsnodes.com/us.

continue to rise.[106] Unquestionably, we are in a public health crisis. OSHA states that "in carrying out its legal duties under the OSH Act, OSHA has determined that healthcare employees face a grave danger from the new hazard of workplace exposures to SARS-CoV-2 except under a limited number of situations (e.g., a fully vaccinated workforce in a breakroom)." This approach does not consider the level of community spread, which is a critical factor in determining the likelihood that a person in the community is contagious with the virus.[107]

The mode of transmission is a factor that OSHA must define clearly and accurately for several reasons. The first reason is that section 6(b)(5) of the OSH Act requires employers to "insure that employees are apprised of all hazards to which they are exposed".[108] If OSHA does not accurately describe how the hazard of getting infected by the virus SARS-CoV-2 occurs, employers who are required to provide training on the hazard will be spreaders of misinformation, which the Surgeon General issued an advisory against.[109] The second reason is that the mode of transmission and dose response curve are linked[110]. This link means knowing the mode of transmission is critical in determining whether workers are exposed at a worksite to a legally unacceptable risk. The third reason is that it determines whether certain mitigation steps are helpful or not helpful in reducing transmission of the virus, or the risk of being exposed to the hazard. The finding on mode of transmission must be reviewed for

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[106] Soucheray, S. (2021, July 23). *US COVID-19 hospital cases surge*. CIDRAP. https://www.cidrap.umn.edu/news-perspective/2021/07/us-covid-19-hospital-cases-surge.
[107] Klompas, M., Rhee, C., & Baker, M. (2021, June 11). *Universal Use of N95s in Healthcare Settings when Community Covid-19 Rates are High*. Clinical Infectious Diseases. https://doi.org/10.1093/cid/ciab539
[108] 29 U.S.C. §655(b)(7)
[109] Department of Health and Human Services. (2021, July 15). Confronting Health Misinformation. https://www.hhs.gov/sites/default/files/surgeon-general-misinformation-advisory.pdf.
[110] Haas, C. N. (2021). *Action Levels for SARS-CoV-2 in Air: Preliminary Approach*. Risk Analysis, 41(5), 705–709. https://doi.org/10.1111/risa.13728

substantial evidence. As stated in ground two of my petition, the mode of transmission is airborne for the virus SARS-CoV-2.[111] The mode of transmission is discussed in section IV-A-2-b of my brief.

The transmissibility of the virus, while distinct from mode of transmission, is another factor OSHA must consider. This question asks how easily the virus can transmit from person to person. This factual finding varies between workplaces; the factors that influence transmissibility appear differently in different workplaces. This factor has changed notably because of the B.1.617.2 variant[112], which produces substantially greater viral loads[113]. OSHA decided to use a settings based approach based on the assumption that certain settings do not have the same elevated risk of having patients who have COVID-19.[114] This assumption is similar to the assumption that non-healthcare workplaces do not have an elevated risk of exposure to COVID-19. The applicable question is whether the risk of exposure to COVID-19 is unacceptably high, not merely whether the risk is elevated in certain settings.

OSHA must consider the relative risk in different industries.[115] OSHA relies on the letter by Doctor John Howard issued on May 22, 2021.[116] This analysis notably states that "transmission of the SARS-COV-2 virus continues to be a hazard of concern for

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[111] https://downloads.regulations.gov/OSHA-2020-0004-1034/attachment_1.pdf
[112] Reardon, S. (2021, July 21). *How the Delta variant achieves its ultrafast spread.* Nature News. https://www.nature.com/articles/d41586-021-01986-w.
[113] Lu, J et. all. (2021, July 7). *Viral infection and transmission in a large well-traced outbreak caused by the Delta SARS-CoV-2 variant.* Virological. https://virological.org/t/viral-infection-and-transmission-in-a-large-well-traced-outbreak-caused-by-the-delta-sars-cov-2-variant/724.
[114] 86 FR 32562
[115] *N. America's Bldg. Trades Unions v. Occupational Safety & Health Admin.*, 878 F.3d 271, 289 (D.C. Cir. 2017)
[116] Howard, J. (2021). "*Response to request for an assessment by the National Institute for Occupational Safety and Health, Centers for Disease Control and Prevention, U.S. Department of Health and Human Services, of the current hazards facing healthcare workers from Coronavirus Disease-2019 (COVID-19).*" https://downloads.regulations.gov/OSHA-2020-0004-0889/content.pdf.

healthcare workers"[117]. Yet through OSHA is also claiming that the logical inverse is accurate, that transmission of the virus is not a hazard concern to the degree that action is needed. As stated in ground one of my petition,[118] healthcare workers are not at a disproportionately elevated risk of getting the virus. The fact that over 3,600 healthcare workers died from the virus[119] in a year, when nearly 100,000 deaths among Americans who are from ages 18 to 64,[120] while tragic, and something that should not be desensitized, that does not show disproportionality among healthcare workers. The epidemiological evidence on which industries have had outbreaks in the workplace is a piece of evidence OSHA must consider in determining relative risk.

Furthermore, OSHA must consider the effects of vaccination and the variants. These factors are interwoven into each of the five prongs. The vaccinations and variants can affect which symptoms may appear, and health effects occur, which could require a reanalysis as to the risks of significant or grave danger to individual health. The vaccines affect the amount of dose required for an adverse response, while the variants can increase the viral load produced. This affects how much risk is tolerable under the fourth prong. And the public health responses as to vaccination and variants affects the discretion OSHA has in the fifth prong.

It is true that disparities exist in which groups have been affected by the virus, based on factors such as race, age, and comorbidities. Yet, I urge caution that the data be used appropriately. One example is that by using the data that shows that older

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[117] *Id.*
[118] https://downloads.regulations.gov/OSHA-2020-0004-1034/attachment_1.pdf
[119] Spencer, J., Jewett, C. (2021, April 8). *12 Months of Trauma: More Than 3,600 US Health Workers Died in Covid's First Year.* Kaiser Health News. https://khn.org/news/article/us-health-workers-deaths-covid-lost-on-the-frontline/.
[120] Centers for Disease Control and Prevention (CDC). (2021, July 8). *Demographic Trends of COVID-19 cases and deaths in the US reported to CDC.* https://covid.cdc.gov/covid-data-tracker/#demographics.

individuals are more likely to die when infected by COVID-19[121]. This data can be used to show that older workers are exposed to greater harms, compared to younger workers. Establishing differential risk among employers would permit concluding that only some workers are at risk, and discriminate against older workers in violation of the Age Discrimination in Employment Act, or individuals who have disabilities under the Americans with Disabilities Act, or against pregnant women and constitute sex discrimination, pursuant to *United Automobile Workers v. Johnson Controls*.[122] A different example is the June 15 Hawkins study, which correlates race to exposure risk due to occupational differences based on race or ethnicity.[123] While this can be used to show a correlation between certain jobs and having occupational risk, taking a race conscious position can lead to the conclusion that certain jobs have a higher occupational risk.

The Supreme Court stated, "[t]he legislative history demonstrates conclusively that Congress was fully aware that the Act would impose real and substantial costs of compliance on industry, and believed that such costs were part of the cost of doing business."[124] But even though the ideal solution for the economy is to pursue elimination through an intense, but brief, nationwide lockdown, with economic support[125], and then reopen without the virus being around, that option is not one that OSHA can choose.

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[121] Centers for Disease Control and Prevention. (2021, July 24). Demographic Trends of COVID-19 cases and deaths in the US reported to CDC: Deaths by age group. https://covid.cdc.gov/covid-data-tracker/#demographics

[122] 499 U.S. 187 (1991)

[123] Hawkins, D. (2020, June 15). Differential occupational risk for COVID-19 and other infection exposure according to race and ethnicity. *American Journal of Industrial Medicine* 63:817-820. https://doi.org/10.1002/ajim.23145.

[124] *American Textile Mfrs. Inst., Inc. v. Donovan*, 452 U.S. 490, 514 (1981)

[125] Oliu-Barton, M., Pradelski, B. S., Aghion, P., Artus, P., Kickbusch, I., Lazarus, J. V., Sridhar, D., & Vanderslott, S. (2021). SARS-CoV-2 elimination, not mitigation, creates best outcomes for health, the economy, and civil liberties. *The Lancet*, 397(10291), 2234–2236. https://doi.org/10.1016/s0140-6736(21)00978-8

Although the feasibility concerns are real, this can be addressed by modifying the scope of the rule.

h. OSHA Determination As to Risk

OSHA determined on page 58 of the draft ETS that "Given the high transmissibility expected in work environments, the risk that employees face of exposure to SARS-CoV-2 is unacceptably high, even though it is related to some extent to population prevalence."[126] OSHA continued on page 67 of the draft ETS the "duration of immunity gained either through infection or through vaccination is not yet fully understood." Two sentences later, OSHA stated "that viruses continue to mutate over time—as we are just beginning to see with SARS-CoV-2—which can cause resistance to immunity developed from previous illness and may impact the performance of existing vaccines". On page 70, OSHA further stated that while "COVID-19 vaccines are authorized to prevent COVID-19, the reduction of disease is not yet significant enough to eliminate the grave danger the SARS-CoV-2 virus causes, and vaccine uptake is not yet widespread enough to result in widespread immunity."

The failure to get people vaccinated in the United States has been a significant issue throughout the past several months.[127] While the CDC's official position is that this was done based on the science[128], a tweet by the Chief of Staff suggests that the unmasking recommendation was an incentive to get people vaccinated.[129] The policy of

[126] https://downloads.regulations.gov/OSHA-2020-0004-1106/attachment_2.pdf
[127] Mandavilli, A. (2021, July 25). Analysis: Vaccine refusal, not the delta variant, is fueling the latest Us surge In Covid cases. *New York Times*. https://www.nytimes.com/2021/07/25/health/coronavirus-vaccine-refusal.html.
[128] The United States Government. (2021, May 13). *Press briefing by White House COVID-19 response team and public health officials.* The White House. https://www.whitehouse.gov/briefing-room/press-briefings/2021/05/13/press-briefing-by-white-house-covid-19-response-team-and-public-health-officials-36/.
[129] https://twitter.com/whcos/status/1398247289420984320?s=21

the administration has been to use incentives to get people vaccinated[130]. The CDC has consistently recommended greater protection for healthcare workers, stating as recently as April 18, 2021, that N95 masks should be reserved for healthcare workers.[131] The recommendations for caretakers at home state, as of July 27, 2021, that they should wear a mask, but medical grade masks are reserved for healthcare workers,[132] when the only distinction between a full time individual home healthcare worker and an unpaid caretaker is that receiving a paycheck.

However, to avoid having this policy apply to healthcare workers, a request was sent by the Acting Assistant Secretary of Labor for OSHA to the National Institute for Occupational Safety and Health on the risks to healthcare workers. Citing a study showing nursing homes in Chicago, where the organization GetMePPEChicago noted that healthcare workers were reusing soiled N95 masks[133] In deference to the CDC, which former OSHA Deputy Assistant Secretary, Jordan Barab, believes is decidedly the White House in favor of the CDC most times,[134] a settings based approach is used.

"OSHA takes a settings- based approach in the ETS, rather than a task-based approach, to ensure that the ETS is consistent with the CDC's COVID–19 guidance, which also takes a settings-based approach that most healthcare employers are

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[130] The United States Government. (2021, June 2). FACT sheet: *President Biden to Announce National month of action to mobilize AN All-of-America sprint to get more people vaccinated by July 4th.* The White House. https://www.whitehouse.gov/briefing-room/statements-releases/2021/06/02/fact-sheet-president-biden-to-announce-national-month-of-action-to-mobilize-an-all-of-america-sprint-to-get-more-people-vaccinated-by-july-4th/.

[131] Centers for Disease Control and Prevention. (2021, April 18). *Types of masks*. Centers for Disease Control and Prevention. https://web.archive.org/web/20210418221305/https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/types-of-masks.html.

[132] Centers for Disease Control and Prevention. (2021, July 2). *COVID19 - caring for someone at home*. Centers for Disease Control and Prevention. https://www.cdc.gov/coronavirus/2019-ncov/if-you-are-sick/care-for-someone.html.

[133] https://twitter.com/getmeppechi/status/1367576570668400641?s=21

[134] https://twitter.com/jbarab/status/1419823007107846144?s=21

accustomed and to protect all employees in these high-risk settings from the hazard of COVID–19, which can be spread from the direct patient care areas to other areas through a variety of personnel interactions and exposures."[135] In the draft ETS, OSHA decided to exempt workers who exclusively work from home or where the worker is the only person in the workplace and it is not reasonably possible that the worker might be exposed to others at work.

Finally, as correctly stated on pages 81-82 of the draft ETS by OSHA, "[t]he science of transmission does not vary by industry, nor does the severity of COVID-19 once an employee is infected; an employee exposed to SARS-CoV-2 might die whether exposed at a meat packing facility, a retail establishment, or an office." The dose response curve, which determines transmission and severity[136], does not vary between industries. However, the dose an individual is effectively exposed to varies based on a variety of factors which undoubtedly vary between industries. As a consequence, different industries have different risks.

2. Nature of the Disease

a. Health and Other Adverse Effects of COVID-19

i. Death from COVID-19 constitute a Grave Risk to Workers

COVID-19 is a fatal disease for many people. The fact that the virus was the leading cause of death in January 2021 and is current a leading cause of death[137] in the

[135] 86 F.R. 32563
[136] Haas, C. N. (2021). *Action Levels for SARS-CoV-2 in Air: Preliminary Approach*. Risk Analysis, 41(5), 705–709. https://doi.org/10.1111/risa.13728
[137] Orgera, K., Ortaliza, J., Amin, K., & Cox, C. (2021, July 1). *COVID-19 Continues to Be a Leading Cause of Death in the U.S. In June 2021*. KFF.

United States is remarkable. Yet, the fact that one out of a thousand Americans died in 2020 from COVID-19[138], but when patients are most infectious, they are generally not sick in the hospital, but may not have symptoms or be in their first few days, where they are at home.[139] Furthermore, due to variants, especially the B.1.617.2 variant, which "[e]vidence suggests … is more transmissible than other variants", the risks of spread have greatly increased.[140] These variants are more fit, replicate faster, and produce greater doses on individuals[141] modifying the dose response curve.

The Supreme Court has held "if the odds are one in a thousand that regular inhalation of gasoline vapors that are 2% benzene will be fatal, a reasonable person might well consider the risk significant and take appropriate steps to decrease or eliminate it."[142] The odds in 2020 were greater than one in a thousand[143] that a person died from "inhalation of virus-bearing aerosols"[144]. Consequently, the death from COVID-19 constitutes a grave danger to all workers exposed to the virus, and also constitutes the lower standard of significant risk to all workers.

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https://www.kff.org/coronavirus-covid-19/issue-brief/covid-19-continues-to-be-a-leading-cause-of-death-in-the-u-s-in-june-2021/.

[138] Caldwell, T. (2020, December 26). *How quickly the US lost 1 in 1,000 Americans to Covid-19.* CNN. https://www.cnn.com/2020/12/26/us/1-in-1000-died-coronavirus-timeline/index.html.

[139] Cevik, M., Tate, M., Lloyd, O., Maraolo, A. E., Schafers, J., & Ho, A. (2020, November 19). *SARS-CoV-2, SARS-CoV, and MERS-CoV viral load dynamics, duration of viral shedding, and infectiousness: a systematic review and meta-analysis.* The Lancet Microbe, 2(1). https://doi.org/10.1016/s2666-5247(20)30172-5

[140] Dougherty K, Mannell M, Naqvi O, Matson D, Stone J. SARS-CoV-2 B.1.617.2 (Delta) Variant COVID-19 Outbreak Associated with a Gymnastics Facility — Oklahoma, April–May 2021. MMWR Morb Mortal Wkly Rep. ePub: 9 July 2021. DOI: http://dx.doi.org/10.15585/mmwr.mm7028e2

[141] Lu, J et. all. (2021, July 7). *Viral infection and transmission in a large well-traced outbreak caused by the Delta SARS-CoV-2 variant.* Virological. https://virological.org/t/viral-infection-and-transmission-in-a-large-well-traced-outbreak-caused-by-the-delta-sars-cov-2-variant/724.

[142] *Indus. Union Dep't, AFL-CIO v. Am. Petroleum Inst.*, 448 U.S. 607, 655 (1980)

[143] Caldwell, T. (2020, December 26). *How quickly the US lost 1 in 1,000 Americans to Covid-19.* CNN. https://www.cnn.com/2020/12/26/us/1-in-1000-died-coronavirus-timeline/index.html.

[144] Zhang, R., Li, Y., Zhang, A. L., Wang, Y., & Molina, M. J. (2020). Identifying airborne transmission as the dominant route for the spread of COVID-19. *Proceedings of the National Academy of Sciences*, 117(26), 14857–14863. https://doi.org/10.1073/pnas.2009637117

ii. Severe and Critical Cases of COVID-19 constitute a Grave Risk to Workers

Even if death has not occured, hospitalization commonly occurs from COVID-19. As of July 24, 2021, 356 hospitalizations occurred in the United States per every 100,000 adults aged 18 through 49.[145] Such numbers are staggering and makes clear that hospitalization from COVID-19 is both a grave danger and the lesser standard of significant danger for all workers. A hospitalization is severe, which is why OSHA regulations require all employers to report hospitalizations be reported to OSHA within 24 hours[146]. With over 2.38 million hospitalizations on over 34.7 million cases[147], the hospitalization rate is 6.86% of cases. This outcome being so frequent, hospitalizations clearly constitute a grave danger, and the lesser included significant risk to all workers.

iii. Long COVID constitutes a Grave Risk to Workers

The question as to whether long COVID constitutes a grave danger or significant risk is not as obvious as the other risks are. The reason is because the standard has not been established. As will be seen, the OSH Act and the American with Disabilities Act (ADA) will be tied together in several ways. On whether long COVID qualifies as severe, I would recommend asking whether long COVID is covered by the ADA. Under 42

[145] Centers for Disease Control and Prevention. (2021, July 30). Covid-19 hospitalizations. Centers for Disease Control and Prevention. https://gis.cdc.gov/grasp/covidnet/covid19_3.html.
[146] 29 C.F.R. 1904.39
[147] Centers for Disease Control and Prevention (CDC). (2021, July 30). *COVID data tracker. New Admissions of Patients with Confirmed COVID-19, United States.* https://covid.cdc.gov/covid-data-tracker/#new-hospital-admissions.

U.S.C. §12102, the definition of a disability is defined. Symptoms last frequently longer than six months,[148] which is not transitory[149]. And the symptoms can vary,[150]

One study notes neurological symptoms which last six months and prevent returning to work occur in half of all COVID-19 patients hospitalized.[151] Further, up to a third of patients who test positive may develop long COVID.[152] Symptoms have lasted eight weeks in about a quarter pregnant or recently pregnant people[153]. The danger from long covid is so varied that a study found a 95% confidence window of an increased likelihood, even if only testing positive, of arrhythmias, bradycardia, chest pain, heart failure, tachycardia, hair loss, diabetes mellitus, hyper lipid anemia, constipation, GERD, fatigue, anxiety, depression, sleep deprivation, muscle weakness, memory loss, smell problem, cough, hypoxemia, and shortness of breath.[154] Furthermore, the neurological decline can be quite significant if COVID-19 is acquired.[155] The methods of spread of long COVID[156] biologically show why it can cause tremendous harm.

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[148] Davis, H. E., Assaf, G. S., McCorkell, L., Wei, H., Low, R. J., Re'em, Y., Redfield, S., Austin, J. P., & Akrami, A. (2021). Characterizing long COVID in an international cohort: 7 months of symptoms and their impact. *EClinicalMedicine*, 101019. https://doi.org/10.1016/j.eclinm.2021.101019

[149] 42 U.S.C. §12102(3)(B)

[150] Kortepeter, M. (2021, July 26). *Could you have LONG Covid? Here are the common signs and symptoms.* Forbes. https://www.forbes.com/sites/coronavirusfrontlines/2021/07/26/could-you-have-long-covid-here-are-the-common-signs-and-symptoms/?sh=6b196ee31bfe.

[151] Frontera, J. A., Yang, D., Lewis, A., Patel, P., Medicherla, C., Arena, V., Fang, T., Andino, A., Snyder, T., Madhavan, M., Gratch, D., Fuchs, B., Dessy, A., Canizares, M., Jauregui, R., Thomas, B., Bauman, K., Olivera, A., Bhagat, D., … Galetta, S. (2021). A prospective study of long-term outcomes Among HOSPITALIZED COVID-19 patients with and WITHOUT neurological complications. *Journal of the Neurological Sciences*, 426, 117486. https://doi.org/10.1016/j.jns.2021.117486

[152] Bliddal, S., Banasik, K., Pedersen, O.B. *et al*. Acute and persistent symptoms in non-hospitalized PCR-confirmed COVID-19 patients. *Sci Rep* 11, 13153 (2021). https://doi.org/10.1038/s41598-021-92045-x

[153] Afshar, Y et al., (2020, December). Clinical presentation of coronavirus disease 2019 (COVID-19) in pregnant and recently pregnant people. Obstetrics and Gynecology 136(6): 1117-1125. https://doi.org/10.1097/AOG.0000000000004178. PMID: 33027186; PMCID: PMC7673633.

[154] Al-Aly, Z., Xie, Y. & Bowe, B. High-dimensional characterization of post-acute sequelae of COVID-19. *Nature* 594, 259–264 (2021). https://doi.org/10.1038/s41586-021-03553-9

[155] A. Hampshire et al., Cognitive deficits in people who have recovered from COVID-19, EClinicalMedicine (2021), https://doi.org/10.1016/j.eclinm.2021.101044

[156] Crook, H., Raza, S., Nowell, J., Young, M., & Edison, P. (2021, July 26). *Long covid—mechanisms, risk factors, and management*. BMJ. https://doi.org/10.1136/bmj.n1648

Even after individuals get COVID-19, they can get a prolonged and difficult recovery from the virus, often without full restoration of health. Allison Navis, a neurologist at Mount Sinai in New York City, says that most patients seen at the long COVID clinic did not require hospitalization.[157] And the symptoms can be severe.[158] Some of the symptoms include shortness of breath which can substantially limit breathing, difficulty concentrating which can substantially limit concentrating, diarrhea which can substantially limit the operation of the bladder functions, which can constitute a disability under the American with Disabilities Act.[159] This is severe so that Doctor Francis Collins, the Director of the National Institutes of Health noted that "I have to emphasize that a critical way to limit the future toll of [long COVID] is to be sure that the number of new cases of COVID-19 is brought down to zero as quickly as possible. Even for young people who consider their risks of acute disease to be low, the long term consequences can be quite serious. So the recognition of [long COVID] is one more reason to seek vaccination of all adults as quickly as possible, and to continue stringent use of public health measures like mask wearing in the meantime."[160]

This sort of infection can constitute a disability under the ADA as the Departments of Justice and Health and Human Services held.[161] In the legislative

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[157] Grey, H. (2021, January 11). *A Mild COVID-19 Case May Result in Long-Term Symptoms.* Healthline. https://www.healthline.com/health-news/a-mild-covid-19-case-may-still-result-in-long-term-symptoms#COVID-19-may-have-lingering-effects.

[158] Lambert, N., Survivor Corps, El-Azab, S. A., Ramrakhiani, N. S., Barisano, A., Yu, L., Taylor, K., Esperanca, A., Downs, C. A., Abrahim, H. L., Rahmani, A. M., Borelli, J. L., Chakraborty, R., & Pinto, M. D. (2021, January 1). *COVID-19 Survivors' Reports of the Timing, Duration, and Health Impacts of Post-Acute Sequelae of SARS-CoV-2 (PASC) Infection*. medRxiv. https://doi.org/10.1101/2021.03.22.21254026.

[159] 42 U.S.C. §12102(a)(1), 42 U.S.C. §1202(2)

[160] Collins, FS. (2021, April 28). Testimony before the House Energy and Commerce Health Subcommittee. Hearing on The Long Haul: Forging a Path Through The Lingering Effects of COVID-19. https://energycommerce.house.gov/sites/democrats.energycommerce.house.gov/files/documents/Witness%20Testimony_Collins_HE_2021.04.28.pdf

[161] United States Government. (2021, July 26). *Guidance on "Long COVID" as a Disability Under the ADA, Section 504, and Section 1557*. Ada.gov. https://www.ada.gov/long_covid_joint_guidance.pdf.

history of the ADA, the legislative history indicated that they saw the risk of transmission of a dangerous infectious disease, such as human immunodeficiency virus (HIV).[162] On page 70, what becomes clear is that while they wanted to protect individuals who have communicable diseases such as HIV or have had such diseases, they rejected the notion that a direct threat includes someone who is reasonably likely to transmit an infectious disease such as HIV. As a consequence, I believe a disability under the ADA being reasonably likely from exposure to SARS-COV-2 is not only a substantial risk, but a grave risk, considering the rates of community spread of over one hundred thousand Americans infected with the virus on July 30 reported.[163]

iv. Cumulative Risk

The guidance on cumulative risk may not be fully understood. But what it means is that while the harms may individually not warrant finding a grave risk, collectively, they might warrant a finding of grave danger or significant risk. This will be most important in the context of the vaccines, because the question will be whether the vaccines eliminate the grave or significant danger if vaccinated, which is discussed subsequently. While this can consider the risks of mild or moderate disease, if such disease does not independently constitute an unacceptable risk, additional harm is required to constitute a grave risk.

[162] H.R. 2273, the Americans with Disabilities Act of 1989, Hearing Before the Subcommittee on the Judiciary and the House Judiciary Committee. (1989).
[163] Newsnodes.com. (2021, July 10). *Newsnodes USA COVID-19 Monitor*. https://newsnodes.com/us.

b. Transmission of COVID-19

i. An Introduction

The mode of transmission determines in many ways how the virus must be contained. This was discussed in my petition extensively[164] and is critical in mitigating the spread of the virus. The finding on the mode of transmission is required to implement the appropriate mitigation. As noted in section III-B of this brief, the determination of the CDC accepted by OSHA that "the primary way the SARS–CoV–2 virus spreads from an infected person to others is through the respiratory droplets"[165] does not constitute substantial evidence. Notably, the modes of transmission are distinct. But is it important to note that not only is the exposure at even a ten times lower dose level over an extended duration substantially lower, in hamsters, the only consequence of such a fomite response appears to be no infection.[166] Consequently, the mode of transmission matters.

ii. Airborne Transmission

The predominant route of transmission mode of transmission of SARS-CoV-2 is through inhalation of aerosols[167] exhaled by a person which contains infectious SARS-CoV-2 virions. I presented in ground two of my petition why the denial of the fact that SARS-CoV-2 is airborne is arbitrary and capricious.[168] OSHA did not mention that the scientific thought favors airborne transmission, such as the letter sent by the two

[164] https://downloads.regulations.gov/OSHA-2020-0004-1034/attachment_1.pdf
[165] 86 F.R. 32392
[166] Port, J.R., Yinda, C.K., Owusu, I.O. et al. SARS-CoV-2 disease severity and transmission efficiency is increased for airborne compared to fomite exposure in Syrian hamsters. Nat Commun 12, 4985 (2021). https://doi.org/10.1038/s41467-021-25156-8
[167] Li, Y. (2021), Hypothesis: SARS-CoV-2 transmission is predominated by the short-range airborne route and exacerbated by poor ventilation. *Indoor Air*, 31: 921-925. https://doi.org/10.1111/ina.12837
[168] https://downloads.regulations.gov/OSHA-2020-0004-1034/attachment_1.pdf

hundred and thirty nine scientists.[169] This was a scientific battle that involved[170] and while the article describes the battle on social media, in response to a WHO tweet, I quote retweeted, which Doctor Jose-Luis Jimenez retweeted, stating, "More @who misinformation: masks are only needed when can't stay 1m apart."[171] That SARS-CoV-2 spreads through airborne particles is not a question open for debate.[172]

One area that was in ground eleven in my petition was on aerosol generating medical procedures (AGMPs).[173] While that airborne transmission can occur during supposedly aerosol-generating medical procedures (AGMPs) appears reasonable at first, studies show AGMPs are less dangerous than talking, singing, shouting, or physical exertion.[174] On March 12, 2020, CDC one page guidance specifically recommended performing AGMPs in an airborne infection isolation room (AIIR)[175] for two reasons. First, the CDC admitting that "much to learn about the newly emerged COVID-19, including how and how easily it spreads"[176] shows the guidance was limited in scope. Second, the CDC in the middle of March of 2020 recommended placing COVID-19 patients on contact precautions and airborne precautions. That decision in March of 2020 was appropriate based on the precautionary principle, notwithstanding

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[169] Lidia Morawska, Donald K Milton, It Is Time to Address Airborne Transmission of Coronavirus Disease 2019 (COVID-19), *Clinical Infectious Diseases*, Volume 71, Issue 9, 1 November 2020, Pages 2311–2313, https://doi.org/10.1093/cid/ciaa939

[170] Molteni, M. (2021, May 13). *The 60-Year-Old Scientific Screwup That Helped Covid Kill*. Wired. https://www.wired.com/story/the-teeny-tiny-scientific-screwup-that-helped-covid-kill/.

[171] https://twitter.com/universalmaski2/status/1316044279064727552?s=21

[172] Vernez, D, Schwarz, S, Sauvain, J-J, Petignat, C, Suarez, G. Probable aerosol transmission of SARS-CoV-2 in a poorly ventilated courtroom. *Indoor Air*. 2021; 00: 1– 10. https://doi.org/10.1111/ina.12866

[173] https://downloads.regulations.gov/OSHA-2020-0004-1034/attachment_2.pdf

[174] Wilson, N.M., Marks, G.B., Eckhardt, A., Clarke, A.M., Young, F.P., Garden, F.L., Stewart, W., Cook, T.M. and Tovey, E.R. (2021), The effect of respiratory activity, non-invasive respiratory support and facemasks on aerosol generation and its relevance to COVID-19. *Anaesthesia*. https://doi.org/10.1111/anae.15475

[175] Centers for Disease Control and Prevention. (2020, March 12). *What healthcare personnel should know about caring for patients with confirmed or possible coronavirus disease 2019.* https://www.cdc.gov/coronavirus/2019-ncov/hcp/caring-for-patients-H.pdf.

[176] *id*.

that subsequent evidence shows contact precautions are not needed for COVID-19 as stated in my petition.[177] As patients on airborne precautions should be placed in an AIIR regardless as to whether or not an AGMP is occurring[178], this does not show droplet transmission of COVID-19.

A study conducted in the United Kingdom showed that antibody levels were significantly higher in healthcare workers not working in the intensive care unit, where surgical masks instead of respirators are worn.[179] Instead, the CDC looks at the various other studies, and misinterprets them. That workers need respirator protection when around people who are infectious with SARS-CoV-2 is obvious such that I recommend fit tested respiratory protection be required when around individuals who may be infectious with COVID-19 in my petition.[180] Yet while trying to justify AGMPs, OSHA cites several studies. One study, which was based on events that took place in February, 2020, in California, had three staff members who tested positive.[181] Two of the three staff members did not wear a mask, and one "removed the mask occasionally to speak".[182] The fact that AGMPs were occurring was a confounding variable, considering that being unmasked, extended duration, and having close contact were factors in each of the staff members who were infected. In the Respiratory Protection Effectiveness

[177] https://downloads.regulations.gov/OSHA-2020-0004-1034/attachment_2.pdf
[178] Centers for Disease Control and Prevention. (2016, January 7). *Transmission-Based Precautions*. Centers for Disease Control and Prevention. https://www.cdc.gov/infectioncontrol/basics/transmission-based-precautions.html.
[179] Shields, A. et al, (2020, September 11). *SARS-CoV-2 seroprevalence and asymptomatic viral carriage in healthcare workers: a cross-sectional study.* Thorax 2020. https://dx.doi.org/10.1136%2Fthoraxjnl-2020-215414
[180] https://downloads.regulations.gov/OSHA-2020-0004-1034/attachment_3.pdf
[181] Heinzerling, A et al., (2020, April 17). Transmission of COVID-19 to Health Care Personnel During Exposures to a Hospitalized Patient—Solano County, California, February 2020. *MMWR Morb Mortal Wkly Rep* 2020; 69: 472-476. DOI: http://dx.doi.org/10.15585/mmwr.mm6915e5.
[182] *id.*

Trial[183], not only were healthcare workers who performed specified AGMPs at an increased risk, given that only 19% of staff wore a N95 and 51% wore a medical mask during intubation, it would make sense that many of these staff members were also not wearing masks during normal contacts. While this was not found to be significant, it makes sense that a substantial number of healthcare workers did not wear a mask for coronavirus patients pre pandemic.

Due to the fact that the peak viral load in the prior severe acute respiratory syndrome had peak viral loads significantly later after onset of symptoms[184] which sharply limits the comparison to COVID-19. Many AGMPs are more likely to occur later in illness. One "systematic review of research" cited by OSHA had severe limitations which is why they stated that "conclusions drawn from this systematic review must be interpreted with caution, given the number and quality of the identified studies."[185] Subsequent research and publications during the pandemic which combine different fields have been issued, such as the Mira Pöhlker preprint.[186] Yet OSHA continues to emphasize AGMPs even though the evidence shows that AGMPs are not as dangerous as coughing.[187]

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[183] Cummings et al., (2020, July 9). Risk factors for healthcare personnel infection with endemic coronaviruses (HKU1, OC43, NL63, 229E): Results from the respiratory protection effectiveness clinical trial. Clin Infect Dis doi: 10.1093/cid/ciaa900. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7454439/pdf/ciaa900.pdf

[184] Cevik, M., Tate, M., Lloyd, O., Maraolo, A. E., Schafers, J., & Ho, A. (2021). SARS-CoV-2, SARS-CoV, and MERS-CoV viral load dynamics, duration of viral shedding, and infectiousness: a systematic review and meta-analysis. *The Lancet Microbe*, 2(1). https://doi.org/10.1016/s2666-5247(20)30172-5

[185] Tran, K et al., (2012, April 26). Aerosol generating procedures and risk of transmission of acute respiratory infections to healthcare care: A systematic review. *PLOSONE* 7(4): e35797. doi: 10.1371/journal.pone.0035797. https://pubmed.ncbi.nlm.nih.gov/22563403/

[186] Pöhlker, M. L., Krüger, O. O., Förster, J.-D., Berkemeier, T., Elbert, W., Fröhlich-Nowoisky, J., Pöschl, U., Pöhlker, C., Bagheri, G., Bodenschatz, E., Huffman, A. J., Scheithauer, S., & Mikhailov, E. (2021, April 8). *Respiratory aerosols and droplets in the transmission of infectious diseases.* arXiv.org. https://arxiv.org/abs/2103.01188v3.

[187] Hamilton, F., Arnold, D., Bzdek, B. R., Dodd, J., Reid, J., Maskell, N., White, C., Murray, J., Keller, J., Brown, J., Shrimpton, A., Pickering, A., Cook, T., Gormley, M., Arnold, D., Nava, G., Reid, J., Bzdek, B. R., Sheikh, S., … Moran, E. (2021). Aerosol generating procedures: are they of relevance for

Notwithstanding evidence showing the absence of enhanced risk from airway management, the Leong study cited next by OSHA contains several errors in arguing to limit airway management to patients outside of the hospital.[188] Notably, they argue that displacement of personal protective equipment (PPE) is an "under appreciated risk". This mirrors Doctor John Conly's argument that "studies have demonstrated side effects associated with the use of particulate respirators"[189] when the relevant consequence that has been observed is not seeing transmission of SARS-CoV-2.[190] Furthermore, the three studies that the paper cites to claim that "all airway interventions are high risk AGMP's" are either to be interpreted with caution,[191] have very low certainty of evidence,[192] or find no evidence supporting CPR being an AGMPs.[193] The next reference on "cardiopulmonary resuscitation provided by homecare workers" is behind a paywall. On endoscopy, one article considers global infection control and formulate

transmission of SARS-CoV-2? *The Lancet Respiratory Medicine*, 9(7), 687–689. https://doi.org/10.1016/s2213-2600(21)00216-2

[188] Leong, YC et al., (2020, December). Clinical considerations for out-of-hospital cardiac arrest management during COVID-19. Resuscitation Plus. 100027-100027. https://doi.org/10.1016/j.resplu.2020.100027.

[189] Conly, J., Seto, W.H., Pittet, D. et al. Use of medical face masks versus particulate respirators as a component of personal protective equipment for health care workers in the context of the COVID-19 pandemic. *Antimicrob Resist Infect Control* 9, 126 (2020). https://doi.org/10.1186/s13756-020-00779-6

[190] Mark Ferris, Rebecca Ferris, Chris Workman, et al. *FFP3 respirators protect healthcare workers against infection with SARS-CoV-2*. Authorea. June 30, 2021. https://www.authorea.com/doi/full/10.22541/au.162454911.17263721/v2.

[191] Tran, K et al., (2012, April 26). Aerosol generating procedures and risk of transmission of acute respiratory infections to healthcare care: A systematic review. *PLOSONE* 7(4): e35797. doi: 10.1371/journal.pone.0035797. https://pubmed.ncbi.nlm.nih.gov/22563403/

[192] Nolan, J. P., Monsieurs, K. G., Bossaert, L., Böttiger, B. W., Greif, R., Lott, C., Madar, J., Olasveengen, T. M., Roehr, C. C., Semeraro, F., Soar, J., Van de Voorde, P., Zideman, D. A., Perkins, G. D., Ainsworth, S., Biarent, D., Bingham, B., Blom, M. T., Borra, V., … Zideman, D. A. (2020). European Resuscitation Council COVID-19 guidelines executive summary. *Resuscitation*, 153, 45–55. https://doi.org/10.1016/j.resuscitation.2020.06.001

[193] Couper, K., Taylor-Phillips, S., Grove, A., Freeman, K., Osokogu, O., Court, R., Mehrabian, A., Morley, P. T., Nolan, J. P., Soar, J., & Perkins, G. D. (2020). COVID-19 in cardiac arrest and infection risk to rescuers: A systematic review. *Resuscitation*, 151, 59–66. https://doi.org/10.1016/j.resuscitation.2020.04.022

model infection control guidelines using PPE based on a global standard[194] while the other one found that while an increase occurred, this was related to burping.[195]

That tuberculosis spreads via autopsy is accepted[196] This does not change the fact that turbelocous is as airborne as COVID-19, even though it is normally less transmissible.[197] Even in trying to justify the risk of an oscillating saw, when the article highlights include that “A high number of aerosol bone dust particles are produced when sawing in bone” and “When inhaled the aerosol can pose health risks as harmful small dust particles and as pathogen carriers”,[198] If OSHA determined that the small dust particles in combination with bioaerosols were significant health risks to forensic pathologists or other autopsy workers, OSHA would be required to take different action. Since actions such as respirators are available, and their implementation “would further reduce a significant health risk and is feasible to implement, then OSHA can issue a standard on this which does not need to be tied to COVID-19.[199] If the agency declines to accept the study regarding bone saws constituting a significant risk, the need to distinguish between COVID-19 and other bioaerosols emerges. Since OSHA chose neither action, their choice is illegal.

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[194] Teng, M et al., (2020, September 16) Endoscopy during COVID-19 pandemic: An overview of infection control measures and practical application. *World J Gastrointest Endosc.* 12 (9): 256-265. https://dx.doi.org/10.4253/wjge.v12.i9.256

[195] Sagami, R et al., (2021, January). Aerosols Produced by Upper Gastrointestinal Endoscopy: A Quantitative Evaluation. *The American journal of gastroenterology*. 116 (1): 202-205. https://doi.org/10.14309/ajg.0000000000000983.

[196] Flavin, R. J., Gibbons, N., & O'Briain, D. S. (2007). Mycobacterium tuberculosis at autopsy--exposure and protection: an old adversary revisited. *Journal of clinical pathology*, 60(5), 487–491. https://doi.org/10.1136/jcp.2005.032276

[197] Peng, Z., Bahnfleth, W., Buonanno, G., Dancer, S. J., Kurnitski, J., Li, Y., Loomans, M. G. L. C., Marr, L. C., Morawska, L., Nazaroff, W., Noakes, C., Querol, X., Sekhar, C., Tellier, R., Greenhalgh, T., Bourouiba, L., Boerstra, A., Tang, J., Miller, S., & Jimenez, J. L. (2021). Practical Indicators for Risk of Airborne Transmission in Shared Indoor Environments and their application to COVID-19 Outbreaks. https://doi.org/10.1101/2021.04.21.21255898

[198] Pluim, JME et al., (2018, June 6). Aerosol production during autopsies: the risk of sawing in bone. *Forensic Science International* 289: 260-267. https://doi.org/10.1016/j.forsciint.2018.05.046.

[199] *Public Citizen Health Research Grp. v. Tyson*, 796 F.2d 1479, 1505 (D.C. Cir. 1986)

iii. Droplet Transmission

In defining the mode of transmission, paragraph two of Section IV-A-II-b specifies that OSHA reasoned that "[t]he findings on physical distancing combined with expert opinion firmly establish the importance of droplet transmission as a driver of SARS-CoV-2 infections and COVID-19 disease."[200] In *Public Citizen Health Research Grp. v. Tyson*, the D.C. Circuit mostly upheld OSHA's rule on ethylene oxide, only vacating the failure to implement short term exposure rule. In upholding that ethylene oxide can cause increased risks of cancer, the court noted that "… OSHA did not reach this position in the face of unified, contrary scientific thought. "[201]

According to the CDC, "People release respiratory fluids during exhalation (e.g., quiet breathing, speaking, singing, exercise, coughing, sneezing)".[202] The likelihood of producing respiratory fluids during quiet breathing is lower than when doing activities such as speaking or singing[203]. These respiratory fluids are mostly under five microns in size.[204] This is more likely to occur when people are closer together, and with longer durations of contacts.[205][206] When people are further away from the source, it gives the aerosols which do not quickly drop, as they mostly are under five microns, time to

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[200] 86 F.R. 32392
[201] *Public Citizen Health Research Grp. v. Tyson*, 796 F.2d 1479, 1487 (D.C. Cir. 1986)
[202] Centers for Disease Control and Prevention. (2021, May 7). *Scientific Brief: SARS-CoV-2 Transmission.* https://www.cdc.gov/coronavirus/2019-ncov/science/science-briefs/sars-cov-2-transmission.html.
[203] Coleman, K. K., Tay, D. J., Tan, K. S., Ong, S. W., Son, T. T., Koh, M. H., Chin, Y. Q., Nasir, H., Mak, T. M., Chu, J. J., Milton, D. K., Chow, V. T. K., Tambyah, P. A., Chen, M., & Wai, T. K. (2021). *Viral Load of SARS-CoV-2 in Respiratory Aerosols Emitted by COVID-19 Patients while Breathing, Talking, and Singing*. https://doi.org/10.1101/2021.07.15.21260561
[204] Centers for Disease Control and Prevention. (2021, June 2). *Ventilation in Buildings.* https://www.cdc.gov/coronavirus/2019-ncov/community/ventilation.html.
[205] Li, Y. (2021), Hypothesis: SARS-CoV-2 transmission is predominated by the short-range airborne route and exacerbated by poor ventilation. *Indoor Air*, 31: 921-925. https://doi.org/10.1111/ina.12837
[206] Jose-Luis Jimenez *et. all*. (2020, December 9). *FAQs on Protecting Yourself from COVID-19 Aerosol Transmission: Version 1.87.* http://www.tinyurl.com/FAQ-aerosols.

decrease in concentration.[207] This makes the claim that physical distancing helps because “gravity pulls the droplets to the ground”[208] erroneous. The aerosols are concentrated nearest the source, and while dilution occurs over distance[209], the spreading out of the aerosols is what is more frequent.

Given that OSHA does not cite expert opinion, the remaining basis that they claim firmly establishes that droplet transmission occurs are two studies. Introducing the first study, OSHA claims that both the Severe Acute Respiratory Syndrome and Middle Eastern Respiratory Syndrome are droplet based transmission. And while the assertion of OSHA that similar coronaviruses to SARS-CoV-2 also spread by droplet transmission is without citation, and both the prior Severe Acute Respiratory Syndrome and Middle Eastern Respiratory Syndrome are classified by the United Kingdom as airborne high consequence infectious diseases,[210] The first study was based on studies of prior coronaviruses and very early studies on SARS-CoV-2. Yet the study only decided to use their discretion to upgrade the recommendation for physical distancing and not the recommendation for masks working against the virus, likely because of viewing the difference between N95 and medical grade masks as insignificant.[211]

A second COVID-19 study from Thailand reviewed physical distancing reduced duration, yet OSHA once again omits relevant findings.[212] Not only was the group who

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[207] Centers for Disease Control and Prevention. (2021, June 2). *Ventilation in Buildings.* https://www.cdc.gov/coronavirus/2019-ncov/community/ventilation.html.
[208] 86 F.R. 36392
[209] Jose-Luis Jimenez *et. all*. (2020, December 9). *FAQs on Protecting Yourself from COVID-19 Aerosol Transmission: Version 1.87.* http://www.tinyurl.com/FAQ-aerosols.
[210] High consequence infectious diseases (HCID). GOV.UK. (2021, May 12). https://www.gov.uk/guidance/high-consequence-infectious-diseases-hcid.
[211] Chu, DK et al., (2020, June 27). Physical Distancing, Face Masks, and Eye Protection to Prevent Person-to-Person Transmission of SARS-CoV-2 and COVID-19: A systematic review and meta-analysis. *Lancet* 395: 1973-1987. https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)31142-9/fulltext
[212] Doung-ngern, P., Suphanchaimat, R., Panjangampatthana, A., Janekrongtham, C., Ruampoom, D., Daochaeng, N....Limmathurotsakul, D. (2020). Case-Control Study of Use of Personal Protective

had and did not have physical contact but stayed a meter apart, but mask wearing consistently throughout the contact and hand washing showed a benefit. In addition, a very strong correlation between mask wearing and hand washing where frequent hand washing was practiced by 79% of mask wearers but only 26% of non mask wearers further shows why the interpretation of the study was flawed. Mask wearing was strongly correlated with lower cases, yet mask wearing some of the time was insignificant compared to mask wearing all of the time. While airborne transmission is also reduced with increased distance,[213] because ventilation is not as effective when close together.[214]

Other cases in healthcare settings of airborne spread of COVID-19 that OSHA cites here are of viable virus in the air containing infectious virus 4.8 meters away in the absence of any AGMPs[215] or the Brigham and Women's Hospital study where a healthcare worker who had a ten minute contact with a patient, notwithstanding universal mask wearing and the healthcare worker wearing eye protection and gloves.[216] OSHA does not consider that hospitals have significantly higher air exchange rates than other building[217] in explaining why healthcare workers need greater

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Measures and Risk for SARS-CoV 2 Infection, Thailand. *Emerging Infectious Diseases*, 26(11), 2607-2616. https://doi.org/10.3201/eid2611.203003.

[213] Jose-Luis Jimenez *et. all*. (2020, December 9). *FAQs on Protecting Yourself from COVID-19 Aerosol Transmission: Version 1.87.* http://www.tinyurl.com/FAQ-aerosols.

[214] Allen JG, Ibrahim AM. Indoor Air Changes and Potential Implications for SARS-CoV-2 Transmission. *JAMA*. 2021;325(20):2112–2113. doi:10.1001/jama.2021.5053 https://jamanetwork.com/journals/jama/fullarticle/2779062

[215] Lednicky, JA et al., (2020, September 11). Viable SARS-CoV-2 in the air of a hospital room with COVID-19 patients. Int J Infect Dis 100: 476-482. https://pubmed.ncbi.nlm.nih.gov/32949774/

[216] Kang, M., Perl, T. M., Klompas, M., Baker, M. A., Rhee, C., Tucker, R., Fiumara, K., Griesbach, D., Bennett-Rizzo, C., Salmasian, H., Wang, R., Wheeler, N., Gallagher, G. R., Lang, A. S., Fink, T., Baez, S., Smole, S., Madoff, L., Goralnick, E., … Morris, C. A. (2021, February 23). *A SARS-CoV-2 Cluster in an Acute Care Hospital.* Annals of Internal Medicine. https://www.acpjournals.org/doi/full/10.7326/M20-7567.

[217] Allen JG, Ibrahim AM. Indoor Air Changes and Potential Implications for SARS-CoV-2 Transmission. *JAMA*. 2021;325(20):2112–2113. doi:10.1001/jama.2021.5053 https://jamanetwork.com/journals/jama/fullarticle/2779062

protection. The role of airborne transmission is clear at close contact and when over six feet away.[218] And while it is true that aerosol transmission decreases as distance increases, distance is not something that should define the mode of transmission.[219] The fact that airborne transmission has occurred beyond six feet has been shown in settings such as “choir concerts, cruise ships, slaughterhouses, care homes, and correctional facilities”.[220] This transmission has occurred even though the CDC definition of a cumulative fifteen minute period has not been met, which led the National Football League to impose contact tracing guidance stricter than the CDC recommended.[221]

As a consequence, enclosed environments, especially when good ventilation and filtration are not present, have higher rates of transmission.[222] The CDC has explained that “Research shows that the particle size of SARS-CoV-2 is around 0.1 micrometer (μm). However, the virus generally does not travel through the air by itself. These viral particles are human-generated, so the virus is trapped in respiratory droplets and droplet nuclei (dried respiratory droplets) that are larger than an individual virus. Most of the respiratory droplets and particles exhaled during talking, singing, breathing, and coughing are less than 5 μm in size.”[223] Furthermore, these particles do not drop to the ground very quickly. “It can take several minutes for particles 10 μm in size to settle,

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[218] https://downloads.regulations.gov/OSHA-2020-0004-1034/attachment_1.pdf
[219] Tang, J. W., Marr, L. C., & Milton, D. K. (2021). *Aerosols should not be defined by distance travelled*. Journal of Hospital Infection. https://doi.org/10.1016/j.jhin.2021.05.007
[220] Greenhalgh, T., Jimenez, J. L., Prather, K. A., Tufekci, Z., Fisman, D., & Schooley, R. (2021). *Ten scientific reasons in support of airborne transmission of SARS-CoV-2*. The Lancet, 397(10285), 1603–1605. https://doi.org/10.1016/s0140-6736(21)00869-2
[221] Mack CD, Wasserman EB, Perrine CG, et al. Implementation and Evolution of Mitigation Measures, Testing, and Contact Tracing in the National Football League, August 9–November 21, 2020. MMWR Morb Mortal Wkly Rep 2021;70:130–135. DOI: http://dx.doi.org/10.15585/mmwr.mm7004e2
[222] Jose-Luis Jimenez *et. all*. (2020, December 9). *FAQs on Protecting Yourself from COVID-19 Aerosol Transmission: Version 1.87.* http://www.tinyurl.com/FAQ-aerosols.
[223] Centers for Disease Control and Prevention. (2021, June 2). *Ventilation in Buildings.* https://www.cdc.gov/coronavirus/2019-ncov/community/ventilation.html.

while particles 5 μm and smaller may not settle for hours or even days."[224] Without adequate ventilation and filtration, which can be shown by using tools such as carbon dioxide readers[225], the buildup of infectious bioaerosols is likely to increase the spread of COVID-19.[226] This can be seen in places such as meat packing settings. OSHA references one meatpacking plant in Germany as an example where inadequate ventilation and physical activity were the cause of increased spread.[227] In the United States, meat packing plants were estimated to cause over 300,000 cases and ten billion dollars in mortality and morbidity costs.[228]

In a study from Korea, infections occurred at a restaurant with five minutes of exposure and over six meters away with directed air.[229] While the study did say droplets were the method, upon reading the article, the authors did not distinguish between airborne and droplet in meaningful ways. statements such as of the changes recommended included "if there is high possibility of transmission by aerosol or droplet transmission over a long distance, N95 respirators or equivalent masks are needed not only in health care settings, but in any indoor environment" and to consider "installation of separate rooms or bulkheads for indoor settings" to stop both modes. The reasoning for the confusion is because of using a five micron dividing line between droplets and

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[224] *id.*
[225] Wood, R., Morrow, C., Ginsberg, S., Piccoli, E., Kalil, D., Sassi, A., Walensky, R. P., & Andrews, J. R. (2014, September 2). *Quantification of Shared Air: A Social and Environmental Determinant of Airborne Disease Transmission.* PLOS ONE. https://doi.org/10.1371/journal.pone.0106622.
[226] Jose-Luis Jimenez *et. all*. (2020, December 9). *FAQs on Protecting Yourself from COVID-19 Aerosol Transmission: Version 1.87.* http://www.tinyurl.com/FAQ-aerosols.
[227] Gunther, T et al., (2020, October 27). SARS-CoV-2 outbreak investigation in a German meat processing plant. EMBO Mol Med (2020) 12: .e13296. https://doi.org/10.15252/emmm.202013296.
[228] Saitone, T. L., Schaefer, A. K., & Scheitrum, D. P. (2021). COVID-19 morbidity and mortality in U.S. meatpacking counties. *Food Policy*, 101, 102072. https://doi.org/10.1016/j.foodpol.2021.102072
[229] Kwon, KS et al., (2020, November 23). Evidence of Long-Distance Droplet Transmission of SARS-CoV-2 by Direct Air Flow in a Restaurant in Korea. *J Korean Med Sci* 35(46): e415. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7707926/

aerosols[230] instead of a one hundred micron line boundary.[231] By contrast, outdoors, transmission is extremely rare.[232]

OSHA next describes the risks of surface transmission. While evidence for direct contact and fomite transmission of the virus is found only at experimental conditions that are unlikely to occur.[233] The contact and fomite routes have been described as "likely only an unusual mode of transmission"[234] While both measles[235] and turbelocous[236] has been detected on surfaces, that does not prove those diseases are not transmitted through inhalation predominantly.

iv. Contact Transmission

While these droplets can theoretically fall to the ground, the CDC should be discussing something that is more than plausible to establish a threat of contact and fomite transmission. While surface transmission of diseases is biologically plausible, with the using of gowns for multiple patients over the past year[237], an absence of

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[230] Molteni, M. (2021, May 13). *The 60-Year-Old Scientific Screwup That Helped Covid Kill*. Wired. https://www.wired.com/story/the-teeny-tiny-scientific-screwup-that-helped-covid-kill/.
[231] Centers for Disease Control and Prevention. (2021, June 2). *Ventilation in Buildings.* https://www.cdc.gov/coronavirus/2019-ncov/community/ventilation.html.
[232] Bazant, M. Z., & Bush, J. W. (2021). A guideline to limit indoor airborne transmission of COVID-19. *Proceedings of the National Academy of Sciences*, 118(17). https://doi.org/10.1073/pnas.2018995118
[233] Schulson, M. (2021, July 9). A Curious Union: Clorox, Cleveland Clinic, and the CDC Foundation. Undark Magazine. https://undark.org/2021/07/13/a-curious-union-clorox-cleveland-clinic-and-the-cdc-foundation.
[234] E. A. Meyerowitz, A. Richterman, R. T. Gandhi and P. E. Sax, "Transmission of SARS-CoV-2: a review of viral, host, and environmental factors," *Annals of internal medicine*, 2020. https://doi.org/10.7326/M20-5008
[235] Werner E. Bischoff, Rebecca J. McNall, Maria W. Blevins, JoLyn Turner, Elena N. Lopareva, Paul A. Rota, John R. Stehle, Jr, Detection of Measles Virus RNA in Air and Surface Specimens in a Hospital Setting, *The Journal of Infectious Diseases*, Volume 213, Issue 4, 15 February 2016, Pages 600–603, https://doi.org/10.1093/infdis/jiv465
[236] Martinez L, Verma R, Croda J, et al. Detection, survival and infectious potential of Mycobacterium tuberculosis in the environment: a review of the evidence and epidemiological implications. *Eur Respir J* 2019; 53: 1802302. https://doi.org/10.1183/13993003.02302-2018.
[237] Mount Sinai . (2021, July 11). *Mount Sinai Health System Personal Protective Equipment Practices.* https://www.mountsinai.org/files/MSHealth/Assets/HS/About/Coronavirus/MSHS-COVID-19-PPE-Practices.pdf.

evidence nosocomial transmission of COVID-19 from reusing gowns or gloves cited by OSHA or the CDC in the ETS is telling. The CDC has stated that gowns are not to be used for multiple patients.[238]

The likely scenario is that someone who is unmasked makes a cough or sneeze that lands on some vector that touches the mucous membranes of the wearer, or someone's hands, gloves, or something else and touches the mucous membranes of the wearer before washing the hands. And other touching can minimize the chances. Furthermore, if the hands come to the face, PPE such as a mask cannot be blocking access to the wearer's face. Given this chain of events that are needed, this route of transmission is not significant. Some other factors cited by OSHA are that "The risk posed by contact transmission depends on a number of factors, including airflow and ventilation, as well as environmental factors (e.g., heat, humidity), time between surface contamination and a person touching those surfaces, the efficiency of transference of virus particles, and the dose of virus needed to cause infection."

"Currently, available data do not support surfaces as a relevant source of SARS-CoV-2 transmission. In healthcare settings with confirmed COVID-19 cases, regular surface disinfection remains a precautionary element of infection control. In public settings, however, the associated risks and harms of regular surface disinfection probably outweigh the expected health benefits."[239] And while surface cleaning may be precautionary in healthcare, and may be done to stop various infectious diseases that

[238] Centers for Disease Control and Prevention. (2016, January 7). *Transmission-Based Precautions*. Centers for Disease Control and Prevention. https://www.cdc.gov/infectioncontrol/basics/transmission-based-precautions.html.
[239] Kampf, G., Pfaender, S., Goldman, E., & Steinmann, E. (2021). SARS-CoV-2 Detection Rates from Surface Samples Do Not Implicate Public Surfaces as Relevant Sources for Transmission. *Hygiene*, 1(1), 24–40. https://doi.org/10.3390/hygiene1010003

transmit by contact transmission, the 2007 CDC guidance[240] does not say that Ebola requires double gloving[241]. One study cited by OSHA[242] for the benefits of surface cleaning showed that diarrhea was a significant symptom of the virus. The study found two other significant factors, masks and avoiding close contact.[243] Given that the symptom of diarrhea was focused on, cleaning would make sense. However, the evidence on fecal oral transmission shows a single cluster.[244]

v. Airborne Transmission Risks are Unacceptable

Indoor settings, especially with extended duration of contacts, and insufficient ventilation increases the risk of breathing shared air[245], and these settings are not exclusive to healthcare. In settings where individuals are suspected or confirmed to have COVID-19, which is a proxy for being contagious with SARS-CoV-2, unlike other settings, levels of community spread does not play a significant role, but instead, whether respiratory protection is provided is the critical factor.[246] Even before COVID-19, a study has shown that a patient is more likely to gain influenza if exposed to an earlier patient in an outpatient setting the same day, unlike back pain or a urinary tract

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[240] Siegel, JD, Rhinehart, E, Jackson, M, Chiarello, L, and the Healthcare Infection Control Practices Advisory Committee. (2007). 2007 Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings. *Centers for Disease Control and Prevention.* https://www.cdc.gov/niosh/docket/archive/pdfs/NIOSH-219/0219-010107-siegel.pdf.

[241] Centers for Disease Control and Prevention. (2018, August 30). *Guidance on Personal Protective Equipment*. Centers for Disease Control and Prevention. https://www.cdc.gov/vhf/ebola/healthcare-us/ppe/guidance.html.

[242] Wang, Y et al., (2020, May 11). Reduction of secondary transmission of SARS-CoV-2 in households by face mask use, disinfection and social distancing: A cohort study in Beijing, China. BMJ Glob Health. 2020; 5(5): e002794. doi: 10.1136/bmjgh-2020-002794. https://pubmed.ncbi.nlm.nih.gov/32467353/

[243] *id.*

[244] E. A. Meyerowitz, A. Richterman, R. T. Gandhi and P. E. Sax, "Transmission of SARS-CoV-2: a review of viral, host, and environmental factors," *Annals of internal medicine*, 2020. https://doi.org/10.7326/M20-5008

[245] Jose-Luis Jimenez *et. all*. (2020, December 9). *FAQs on Protecting Yourself from COVID-19 Aerosol Transmission: Version 1.87.* http://www.tinyurl.com/FAQ-aerosols.

[246] Mark Ferris, Rebecca Ferris, Chris Workman, et al. *FFP3 respirators protect healthcare workers against infection with SARS-CoV-2*. Authorea. June 30, 2021. https://www.authorea.com/doi/full/10.22541/au.162454911.17263721/v2.

infection,[247] And while healthcare settings may not be ventilated for airborne diseases, OSHA does not state that ventilation is lower in healthcare settings. And while shared equipment or common spaces for healthcare occurs, OSHA does not say that this is particular to healthcare, and in any event, the shared equipment is not significant given the absence of evidence of fomite transmission.[248]

As noted on page 57 of the draft ETS, "there are a number of factors—often present in workplaces—that can increase the risk of transmission: indoor settings, prolonged exposure to respiratory particles, and lack of proper ventilation. First, and most significantly, workplaces are commonly indoor settings where people are in close contact with others. Employees are often in these locations for prolonged periods of time over the course of the day. Furthermore, workspaces are typically not designed for physical distancing; nor are they ventilated adequately to minimize infections. …. [Employees] often share a number of common spaces with other workers, including bathrooms, break rooms, and elevators. Based on these characteristics, SARS-CoV-2 appears to be highly transmissible in work environments, a conclusion supported by existing data. COVID-19 incident rates have increased significantly for adults of working age as the pandemic has progressed in comparison with other age groups, with researchers noting that occupational status might be a driver." The virus is readily

[247] Neprash, H. T., Sheridan, B., Jena, A. B., Grad, Y. H., & Barnett, M. L. (2021). Evidence of respiratory infection transmission within physician offices could inform outpatient infection control. *Health Affairs,* 40(8), 1321–1327. https://doi.org/10.1377/hlthaff.2020.01594

[248] Kampf, G., Pfaender, S., Goldman, E., & Steinmann, E. (2021). SARS-CoV-2 Detection Rates from Surface Samples Do Not Implicate Public Surfaces as Relevant Sources for Transmission. *Hygiene*, 1(1), 24–40. https://doi.org/10.3390/hygiene1010003.

transmissible in indoor settings, while not transmitted outdoors[249]. The conclusion in the draft ETS is supported by the data as shown in ground one of my petition.[250]

The risk of getting infected by the virus in work environments is directly correlated with population prevalence of the virus. However, while the virus is [251]transmissible in shared indoor settings, as stated by OSHA on page 58 of the draft STS, “the risk that employees face of exposure to SARS-CoV-2 is unacceptably high” presently throughout the United States. This is not limited to the United States, or limited to work, since in places that are not at elimination status, the risk of the virus is unacceptably high, in my view, at the present time. The factor driving this spread is a new variant, specifically B1.617.2. The variant produces significantly greater viral load, estimated at a factor or a thousand and decreases the latency period before infection occurs[252] and as the inoculum is increased, the dose response consequences of more severe disease or increased spread[253] may occur.

The increase or decrease in spread can theoretically be measured by using the reproductive number, which is often noted as R_0. And while this theoretical value may have some interest, the R_0 value without mitigation and before the variants was

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[249] Sullum, J. (2021, May 26). *An epidemiologist confirms that the CDC Director Misrepresented her study of Outdoor Covid-19 Transmission*. Reason.com. https://reason.com/2021/05/26/an-epidemiologist-confirms-that-the-cdc-director-misrepresented-her-study-of-outdoor-covid-19-transmission/.

[250] https://downloads.regulations.gov/OSHA-2020-0004-1034/attachment_1.pdf

[251] Lu, J et. all. (2021, July 7). *Viral infection and transmission in a large well-traced outbreak caused by the Delta SARS-CoV-2 variant.* Virological. https://virological.org/t/viral-infection-and-transmission-in-a-large-well-traced-outbreak-caused-by-the-delta-sars-cov-2-variant/724.

[252] *id.*

[253] Van Damme, W., Dahake, R., van de Pas, R., Vanham, G., & Assefa, Y. (2021). COVID-19: Does the infectious inoculum dose-response relationship contribute to understanding heterogeneity in disease severity and transmission dynamics? *Medical Hypotheses*, 146, 110431. https://doi.org/10.1016/j.mehy.2020.110431

estimated at 5.7[254]. This was before the variants, especially the B.1.617.2 which has substantially greater transmissibility. Instead, using the effective reproduction number is more appropriate[255]. Furthermore, because of the nature of reproduction, the effective reproduction number is an exponential curve. Due to the variants and relaxing of other public health measures, notwithstanding that almost half of Americans are estimated to be vaccinated[256], the effective reproductive number in the United States is, as of July 19, estimated to be around 1.4[257]. To get the effective reproductive number well below one, and get on track for elimination, which is the ideal solution for the economy[258], it will take using vaccinations with rigorous non pharmaceutical interventions, which due to an unlikelihood of implementing the hard lockdowns needed, would appear to require continued interventions.

The spread of COVID-19 is also being driven by the fact that according to some studies, transmission by people who do not have COVID-19 symptoms constitutes even a majority of all transmission.[259] The period until contagiousness can be shorter than the

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[254] Sanche, S., Lin, Y., Xu, C., Romero-Severson, E., Hengartner, N., & Ke, R. (2020). *High Contagiousness and Rapid Spread of Severe Acute Respiratory Syndrome Coronavirus 2*. Emerging Infectious Diseases, 26(7), 1470-1477. https://doi.org/10.3201/eid2607.200282.

[255] Delamater, PL et al., (2019). Complexity of the basic reproduction number (R0). *Emerging Infectious Disease* 25(1): 1-4. https://doi.org/10.3201/eid2501.171901.

[256] Adams, K. (2021, July 21). States ranked by percentage of population fully vaccinated: July 21. Becker's Hospital Review. https://www.beckershospitalreview.com/public-health/states-ranked-by-percentage-of-population-vaccinated-march-15.html.

[257] London School of Hygiene and Tropical Medicine. (2021, July 19). *COVID-19: National and Subnational Forecasts for the United States of America.* https://epiforecasts.io/covid/posts/national/united-states/.

[258] Oliu-Barton, M., Pradelski, B. S., Aghion, P., Artus, P., Kickbusch, I., Lazarus, J. V., Sridhar, D., & Vanderslott, S. (2021). SARS-CoV-2 elimination, not mitigation, creates best outcomes for health, the economy, and civil liberties. *The Lancet*, 397(10291), 2234–2236. https://doi.org/10.1016/s0140-6736(21)00978-8

[259] Johansson, MA et al., (2021, January 7). SARS-CoV-2 transmission from people without COVID-19 symptoms. *JAMA Network Open*. 4(1): e2035057. doi: 10.1001/jamanetworkopen.2020.35057. https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2774707

time to see symptoms.[260] As a consequence, what needs to be acknowledged is that "SARS-CoV-2 is silently spreading in aerosols exhaled by highly contagious infected individuals with no symptoms."[261] Given the OSHA claim that "asymptomatic transmission may result in more transmissions than symptomatic cases, perhaps because asymptomatic persons are less likely to be aware of their infection and can unknowingly continue to spread the disease to others," this risk should be heeded in our public guidance.

What should be clear is that the virus is airborne, transmits without symptoms, and requires mitigation. What OSHA is required to provide is "such relevant evidence as a reasonable mind might accept as adequate to support a conclusion."[262] Given the dangers of the B.1.617.2 variant[263][264], and the fact that the variants are airborne just as much as the other variants as that the rate of reproduction does not determine the mode of transmission[265], we need to accept the transmission of the virus is airborne and easily transmissible. One study goes so far as to say evolutionary pressures on the virus are forcing it to select the variants that are more airborne.[266] Furthermore, even those who

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[260] Nishiura, H et al., (2020, March 4). Serial interval of novel coronavirus (COVID-19) infections. Int J Infect Dis. 2020 Apr; 93: 284-286. doi: 10.1016/j.ijid.2020.02.060. Epub 2020 Mar 4. PMID: 32145466; PMCID: PMC7128842. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7128842/

[261] Prather, K. A., Wang, C. C., & Schooley, R. T. (2020, June 26). Reducing transmission of SARS-CoV-2. *Science*. https://science.sciencemag.org/content/368/6498/1422.

[262] *Biestek v. Berryhill*, 139 S. Ct. 1148, 1154 (2019)

[263] Rovella, D. (2021, July 12). *Your Evening Briefing: U.S. Covid Cases Spike Most Since April 2020.* Bloomberg.com. https://www.bloomberg.com/news/newsletters/2021-07-12/evening-briefing-newsletter-u-s-covid-cases-up-most-since-april-2020.

[264] O'Donnell, T. (2021, July 12). U.S. COVID-19 hospitalizations are ticking up again as Delta variant spreads. The Week. https://theweek.com/coronavirus/1002516/us-covid-19-hospitalizations-are-ticking-up-again-as-delta-variant-spreads.

[265] MacIntyre, C.R., Ananda-Rajah, M.R. Scientific evidence supports aerosol transmission of SARS-COV-2. Antimicrob Resist Infect Control 9, 202 (2020). https://doi.org/10.1186/s13756-020-00868-6

[266] Adenaiye, O. O., Lai, J., Bueno de Mesquita, P. J., Hong, F. H., Youssefi, S., German, J. R., Tai, S.-H. S., Albert, B. J., Schanz, M., Weston, S., Hang, J., Fung, C. K., Chung, H. K., Coleman, K. K., Sapoval, N., Treangen, T., Maljkovic Berry, I., Mullins, K. E., Frieman, M., … Milton, D. K. (2021). *Infectious*

are vaccinated are at risk when individuals who are unvaccinated are around.[267] And given the risks of B.1.617.2 and how quickly the variant is becoming the predominant variant in the United States,[268] widespread circulation of the virus in the United States is clear. We do not need to use seroprevalence to determine the spread of the virus, and can instead use the fact that over thirty four million Americans have been infected by the virus to show it circulates.[269]

Finally, due to the data and the other evidence showing the inefficiencies of other routes of transmission, especially the contact route, and how in those rare cases when you might get infected, it is likely to produce a mild case[270]. Given the long times it takes for the aerosols to drop to the ground[271] and unlikelihood of scattering in a close space at a heightened density to infect and cause illness, meaning they are likely to flow and be inhaled.[272] Consequently, the risks of contact transmission of COVID-19 are negligible.

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sars-cov-2 in exhaled aerosols and efficacy of masks during early mild infection. https://doi.org/10.1101/2021.08.13.21261989

[267] Dearen, J., Alonso-Zaldivar, R., &; Press, A. (2021, July 21). *Unvaccinated staff linked to COVID-19 infections and deaths among vaccinated patients in nursing homes, CDC says*. Anchorage Daily News. https://www.adn.com/nation-world/2021/07/21/unvaccinated-staff-linked-to-covid-19-infections-and-deaths-among-vaccinated-patients-in-nursing-homes-cdc-says/.

[268] Crist, C. (2021, July 20). *Delta Variant Now Accounts for 83% of U.S. Cases*. WebMD. https://www.webmd.com/lung/news/20210720/delta-variant-now-accounts-for-83-of-us-covid-cases.

[269] Centers for Disease Control and Prevention (CDC). (2021, July 21). *COVID data tracker. Trends in number of COVID-19 cases and deaths in the US reported to CDC, by state/territory: Trends in Total COVID-19 Deaths in the United States Reported to CDC.* https://covid.cdc.gov/covid-data-tracker/#trends_dailytrendscases.

[270] Port, J.R., Yinda, C.K., Owusu, I.O. et al. SARS-CoV-2 disease severity and transmission efficiency is increased for airborne compared to fomite exposure in Syrian hamsters. Nat Commun 12, 4985 (2021). https://doi.org/10.1038/s41467-021-25156-8

[271] Centers for Disease Control and Prevention. (2021, June 2). *Ventilation in Buildings.* https://www.cdc.gov/coronavirus/2019-ncov/community/ventilation.html.

[272] Centers for Disease Control and Prevention. (2021, June 2). *Ventilation in Buildings.* https://www.cdc.gov/coronavirus/2019-ncov/community/ventilation.html.

c. The Effect of Vaccines on the Grave Danger Presented by SARS-CoV-2

In determining whether the need for the emergency temporary standard or final rule still exists, the question that I will ask is whether the vaccines eliminate the risk of grave danger or substantial risk. In *Public Citizen Health Research Group*, the D.C. Circuit reasoned that while a reduction was reasonable, it only prevented the need for an emergency temporary standard being mandatory. “Given the substantial evidence of voluntary reduction in exposure levels and the predominantly lower levels reported in the available studies, a 10 ppm "average" appears to us a reasonable assumption.”[273]

Similar viral loads with the B.1.617.2 variant may be seen within the first few days between vaccinated and unvaccinated individuals in a preprint from Singapore.[274] This danger was suggested in a report concerning the July 4, 2021 Provincetown, Massachusetts outbreak.[275] Studies also suggest that the risk of long COVID is reduced by half if given two vaccine doses.[276] While the vaccine offer strong protection against the vaccines and protection from onward transmission, even against more dangerous variants[277], this is not enough. It is true that being unvaccinated is the cause for much of the transmission[278].

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[273] *Public Cit. Health Research Grp. v. Auchter*, 702 F.2d 1150, 1156 (D.C. Cir. 1983)
[274] Chia, P. Y., Xiang Ong, S. W., Chiew, C. J., Ang, L. W., Chavatte, J.-M., Mak, T.-M., Cui, L., Kalimuddin, S., Chia, W. N., Tan, C. W., Ann Chai, L. Y., Tan, S. Y., Zheng, S., Pin Lin, R. T., Wang, L., Leo, Y.-S., Lee, V. J., Lye, D. C., & Young, B. E. (2021). Virological and serological kinetics of sars-cov-2 delta variant vaccine-breakthrough infections: A multi-center cohort study. https://doi.org/10.1101/2021.07.28.21261295
[275] Brown CM, Vostok J, Johnson H, et al. Outbreak of SARS-CoV-2 Infections, Including COVID-19 Vaccine Breakthrough Infections, Associated with Large Public Gatherings — Barnstable County, Massachusetts, July 2021. *MMWR Morb Mortal Wkly Rep*. ePub: 30 July 2021. DOI: http://dx.doi.org/10.15585/mmwr.mm7031e2
[276] Office Of National Statistics, UK. (2021, July 22). Short Report on Long COVID. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1007511/S1327_Short_Long_COVID_report.pdf.
[277] Vitiello, A., Ferrara, F., Troiano, V. et al. COVID-19 vaccines and decreased transmission of SARS-CoV-2. *Inflammopharmacol* (2021). https://doi.org/10.1007/s10787-021-00847-2
[278] Lopez, G. (2021, August 3). *Breakthrough cases aren't the cause of the us covid-19 surge*. Vox. https://www.vox.com/22602039/breakthrough-cases-covid-19-delta-variant-masks-vaccines.

The COVID-19 vaccines are extremely safe and are effective. I have submitted a citizen's petition calling on the FDA to fully approve the COVID-19 vaccines.[279] However, the evidence from Israel points to waning immunity[280] as specified by the Israel director of Public Health Services, Doctor Sharon Alroy-Preis, that the vaccines wane over time. Nevertheless, Doctor Anthony Fauci commented that "We already know that people who get breakthrough infections and don't go on to get advanced disease requiring hospitalization, they too are susceptible to long COVID".[281] This is bad such that "[i]f we don't crush the outbreak to the point of getting the overwhelming proportion of the population vaccinated, then what will happen is the virus will continue to smolder through the fall into the winter, giving it ample chance to get a variant which, quite frankly, we're very lucky that the vaccines that we have now do very well against the variants — particularly against severe illness."[282]

Furthermore, some studies have concluded that the vaccine effectiveness is at 59%.[283] The virus replicates extremely quickly, with new variants producing heavily increased viral loads.[284] For these reasons, I conclude that the risk to workers is not eliminated by the vaccines alone. While being fully vaccinated is important, getting community spread lower is critical. The prior studies showed remarkable efficacy for the

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[279] https://downloads.regulations.gov/FDA-2021-P-0545-0001/attachment_2.pdf
[280] CBS Interactive. (2021, August 1). Transcript: Dr. Sharon Alroy-preis on "face THE Nation," August 1, 2021. CBS News. https://www.cbsnews.com/news/transcript-dr-sharon-alroy-preis-on-face-the-nation-august-1-2021/.
[281] Wilner, M. (2021, August 4). Fauci fears that a variant worse than delta is Coming, says COVID-19 cases may double. McClatchy Washington Bureau. https://amp.mcclatchydc.com/news/coronavirus/article253248688.html.
[282] *id.*
[283] Paul Elliott *et. al*. (n.d.). REACT-1 round 13 final report: exponential growth, high prevalence of SARS-CoV-2 and vaccine effectiveness associated with Delta variant in England during May to July 2021. https://spiral.imperial.ac.uk/bitstream/10044/1/90800/2/react1_r13_final_preprint_final.pdf.
[284] Lu, J et. all. (2021, July 7). *Viral infection and transmission in a large well-traced outbreak caused by the Delta SARS-CoV-2 variant.* Virological. https://virological.org/t/viral-infection-and-transmission-in-a-large-well-traced-outbreak-caused-by-the-delta-sars-cov-2-variant/724.

vaccines, However, while the vaccines are not enough, in an environment where elimination is not being sought, a zero COVID risk strategy is infeasible.[285] Furthermore, while elimination is better for the economy and public health,[286] this does not mean that OSHA can require everyone to take precautions such as wearing a mask indefinitely. The Supreme Court held that safety cannot mean being risk free[287], and this means that some limits are likely required.

The CDC has acknowledged that the guidance on getting tested should be modified, which is why as of July 29, they recommended that getting tested three to five days after exposure and wearing a mask until the fourteen days are concluded or the test is negative is appropriate.[288] Furthermore, the CDC has stated that even if vaccinated, in areas with moderate to substantial community spread, wear a mask indoors.[289] The Provincetown outbreak was identified as potential vaccinated to unvaccinated spread by the CDC.[290]

But as to the question of substantial evidence, this requires a different analysis. While I believe OSHA should take regulatory action to protect individuals who are fully vaccinated, the standard of review is deferential. Since I agree that the vaccines reduce

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[285] Chait, J. (2021, March 3). Zero COVID risk is the wrong standard. Intelligencer. https://nymag.com/intelligencer/article/school-opening-science-coronavirus-teacher-unions-zeroism.html.

[286] Blakely, T., Thompson, J., Bablani, L., Andersen, P., Ait Ouakrim, D., Carvalho, N., Abraham, P., Boujaoude, M.-A., Katar, A., Akpan, E., Wilson, N., & Stevenson, M. (2021). Association of Simulated Covid-19 policy responses for social restrictions AND Lockdowns With Health-adjusted LIFE-YEARS and costs in Victoria, Australia. JAMA Health Forum, 2(7). https://doi.org/10.1001/jamahealthforum.2021.1749

[287] *Industrial Union Department v. American Petroleum Institute*, 448 U.S. 607, 642 (1980)

[288] Centers for Disease Control and Prevention. (2021, July 29). COVID-19: When to quarantine. Centers for Disease Control and Prevention. https://www.cdc.gov/coronavirus/2019-ncov/if-you-are-sick/quarantine.html.

[289] Centers for Disease Control and Prevention. (2021, July 27). When you've been fully vaccinated. Centers for Disease Control and Prevention. https://www.cdc.gov/coronavirus/2019-ncov/vaccines/fully-vaccinated.html#vaccinated.

[290] Brown CM, Vostok J, Johnson H, et al. Outbreak of SARS-CoV-2 Infections, Including COVID-19 Vaccine Breakthrough Infections, Associated with Large Public Gatherings — Barnstable County, Massachusetts, July 2021. *MMWR Morb Mortal Wkly Rep*. ePub: 30 July 2021. DOI: http://dx.doi.org/10.15585/mmwr.mm7031e2

death, hospitalization, long COVID, and infection[291], it becomes a question of risk. Even with cumulative risk, the fact that the CDC says that the vaccines provide strong protection against COVID-19, particularly hospitalization and death, combined with the lack of overwhelming evidence against this possibility, is not enough to disprove that substantial evidence exists. If “nausea, excessive salivation and perspiration, blurred vision, abdominal cramps, vomiting, and diarrhea, in approximately that sequence”[292] was held not to constitute a grave illness, then I do not believe that I can reasonably say that OSHA is compelled to view vaccinated workers as being at grave risk.

But while the assumption that the vaccines eliminate the risk for all workers may be reasonable, it is a determination that the vaccinations adequately assure “that no [vaccinated] employee will suffer material impairment of health or functional capacity even if such employee has regular [occupational] exposure to [the virus SARS-COV-2] for the period of [such employee’s] working life.”[293] Otherwise, OSHA must determine whether the risk of employees being exposed is great enough to warrant taking mitigation to the virus.

The reason this is significant is because determination of risk will affect the measures employers are required to take. Because the vaccines provide similar protection to healthcare workers and other workers, OSHA can state that a certain likelihood of getting COVID-19 from occupational exposure must be assessed. OSHA can say the risk is only significant when someone is suspected or confirmed to have COVID-19. OSHA can use community spread and consider how different industries

[291] 86 F.R. 32396-32397
[292] *Fla. Peach Grow. Ass'n v. U.S. Dept. of Lab*, 489 F.2d 120, 131 (5th Cir. 1974)
[293] 29 U.S.C. §655(b)(5)

have different risks. OSHA can distinguish the occupational risk between different industries, but that would require epidemiological evidence, not mere speculation.

3. Impact on the Workplace

a. Occupational Risk Factors

On pages 81-82 of the draft ETS, OSHA proclaims "[t]he science of transmission does not vary by industry, nor does the severity of COVID-19 once an employee is infected; an employee exposed to SARS-CoV-2 might die whether exposed at a meat packing facility, a retail establishment, or an office." In describing that the risks vary in different settings, OSHA took a nationwide standard singling out one industry. In order to do so, OSHA must provide substantial evidence that that industry uniquely is at an elevated risk. The singling out of the healthcare industry is not justified, as stated in ground one of my petition[294] and the draft ETS. While that documentation in that section adequately sets out why I disagree with OSHA's change in position from the draft ETS

While the danger of getting COVID-19 is clear, the risks of transmission vary between different settings. For example, outdoor settings are at minimal risk[295]. As another example, while settings where individuals known or suspected to have the virus are at incredible risk,[296] the risk of transmission while wearing respiratory protection is very low.[297] Different workplaces have different levels of interaction with the public.

[294] https://downloads.regulations.gov/OSHA-2020-0004-1034/attachment_1.pdf
[295] Sullum, J. (2021, May 26). *An epidemiologist confirms that the CDC Director Misrepresented her study of Outdoor Covid-19 Transmission*. Reason.com. https://reason.com/2021/05/26/an-epidemiologist-confirms-that-the-cdc-director-misrepresented-her-study-of-outdoor-covid-19-transmission/.
[296] Mark Ferris, Rebecca Ferris, Chris Workman, et al. *FFP3 respirators protect healthcare workers against infection with SARS-CoV-2*. Authorea. June 30, 2021. https://www.authorea.com/doi/full/10.22541/au.162454911.17263721/v2.
[297] American Conference of Government Industrial Hygienists. (2021, May 25). Covid-19 fact sheet: Workers need respirators. ACGIH. https://www.acgih.org/covid-19-fact-sheet-worker-resp/.

Levels of community spread and vaccination rates are not uniform throughout the nation. Ventilation levels are not the same in each workplace, This means that the likelihood of inhaling SARS-COV-2 varies between different workplaces. The vaccines do nothing to affect the likelihood of initially inhaling the virus, which is the hazard that OSHA has to guard against in issuing the rule. Furthermore, transmission occurs in the same manner regardless of whether the location of exposure is a healthcare workplace, a non-healthcare workplace, or not a workplace.[298]

As stated by OSHA on page 80 of the draft ETS, “workplace-based clusters provide evidence that workplaces in a wide range of industries have been affected by COVID-19, that many employees face exposure to infected people in their workspaces, and that it is likely that SARS-CoV-2 transmission is occurring in the workplace.” Even fleeting exposures to COVID-19 pose a significant danger of getting infected by the virus[299]. And when you have what the CDC calls a “close contact”, which is being within six feet of a person, who is contagious regarding SARS-COV-2, for fifteen minutes over twenty-four hours, or three feet in “K–12 indoor classroom” setting where the involved student both wore a mask[300], which OSHA calls a “fairly brief exposure,”[301] is incredibly dangerous. In such a scenario, indoors, without respiratory protection, as stated in ground four of my petition[302], it is very likely that transmission of the virus occurred.

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[298] https://downloads.regulations.gov/OSHA-2020-0004-1034/attachment_1.pdf
[299] Haseltine, W. A. (2021, June 29). *Infection through "fleeting contact" with the Delta variant leads TO lockdowns across Australia.* Forbes. https://www.forbes.com/sites/williamhaseltine/2021/06/28/infection-through-fleeting-contact-with-the-delta-variant-leads-to-lockdowns-across-australia/?sh=4fd857675d4f.
[300] Centers for Disease Control and Prevention. (2021, August 3). Appendices. Centers for Disease Control and Prevention. https://www.cdc.gov/coronavirus/2019-ncov/php/contact-tracing/contact-tracing-plan/appendix.html#contact.
[301] 86 F.R. 32400
[302] https://downloads.regulations.gov/OSHA-2020-0004-1034/attachment_2.pdf

Workers who are around someone who is presumed or confirmed to have COVID-19 and who have not cleared isolation are likely to be around someone who is contagious with the virus. Consequently, workers exposed to such individuals are most likely to be exposed to the virus.[303] When one in a hundred people in the community have the virus covid-19, assuming that having the virus can be treated as a proxy for contagiousness, it means that in ninety-nine out of one-hundred occurrences, a specific person will not have the virus. When someone is suspected or confirmed to have COVID-19, that likelihood of having the virus increases drastically.

Another way this can be described is that suppose individuals can be classified into two groups, one group of individuals who are presently contagious with the virus and one group of individuals who are presently not contagious with the virus. In the non contagious group, the risk of transmission from such an individual is always zero. However, in the contagious group, the risk varies based on factors such as the duration of exposure, amount of talking, mask wearing, whether indoors, ventilation quality, whether the exposed person is wearing fit tested respiratory protection, and similar factors. Without appropriate mitigation, for a contact of considerable duration, the risk of infection is very high. Even if an individual has a one in ten-thousand likelihood of getting infected from a given contact, if ten thousand contacts occur, the likelihood of getting infected cumulatively at least once is nearly 64%.

[303] Mark Ferris, Rebecca Ferris, Chris Workman, et al. *FFP3 respirators protect healthcare workers against infection with SARS-CoV-2*. Authorea. June 30, 2021. https://www.authorea.com/doi/full/10.22541/au.162454911.17263721/v2.

b. Non Healthcare Worker Occupational Risks

The first question is do we need studies to show occupational risk? The answer is we do not need randomized trials. These sorts of trials are not practical to conduct, cannot be randomized, and in any event, the epidemiological data can show where the occupational rates are highest. The reason is that you can look at the data and discover where the occupational hazards are.

In Los Angeles, California, a study showed that the percentage of individuals who tested positive were higher in construction, first responders, grocery store workers, correctional workers, and food service workers compared to healthcare personnel[304]. A study among workers in California showed that the greatest excess mortality[305] occured in transportation, facilities, food or agriculture, and manufacturing workers. Among occupational sectors, health or emergency and government or community had lower excess mortality per capita compared to all other groups ages 18-65, except only non essential workers.

In Illinois, the data showed that excluding long term care, assisted living, skilled care, and developmental disabilities facilities, healthcare was not the driver of outbreaks.[306] The greatest was manufacturing, followed by two more congregate care settings, group homes and a correctional facility. Then came daycare, community events, behavioral health, workplaces, colleges, retail, religious locations, restaurants,

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[304] Allan-Blitz L, Turner I, Hertlein F, Klausner J. (2020, December 11). *High frequency and prevalence of community-based asymptomatic SARS-CoV-2 Infection*. medRxix. https://doi.org/10.1101/2020.12.09.20246249.

[305] Chen Y-H, Glymour M, Riley A, Balmes J, Duchowny K, Harrison R, et al. (2021, June 4) Excess mortality associated with the COVID-19 pandemic among Californians 18–65 years of age, by occupational sector and occupation: March through November 2020. PLoS ONE 16(6): e0252454. https://doi.org/10.1371/journal.pone.0252454

[306] COVID-19 outbreak LOCATIONS. COVID-19 Outbreak Locations | IDPH. (2021, August 6). https://www.dph.illinois.gov/covid19/outbreak-locations?regionID=0&rPeriod=1.

senior living, office settings, warehouses, first responders, bars, food production, homeless shelters, hospitals, and then medical clinics or dental offices. Louisiana also showed that clusters occur in a variety of settings.[307]

In North Carolina, ahead of healthcare were colleges and universities, K-12 schools, child care religious gatherings, manufacturing, government services, and other workplaces.[308] In Nashville, Tennessee, of 200 clusters, a single cluster existed in healthcare outside of long term care, while 46 were in long term care facilities.[309] OSHA states on page 84 of the draft ETS that "Settings with more than 5% of the total clusters were bars, commercial/warehouse facilities, congregate housing, construction, correctional facilities, day care centers, long-term care facilities, and schools."

This cannot be limited to some settings. In retail, one study from Massachusetts showed that retail workers[310] who had direct customer interactions were five times as likely to have COVID-19, likelihood increased when using measures such as public transportation, and this led to increased stress for more exposed workers. Manufacturing is rated as having a very high risk of exposure in many places, including having the greatest number of clusters in Illinois.[311] Transportation workers also had elevated excess per capita death rates compared to healthcare workers in California[312].

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[307] Louisiana Department of Health. (2021, August 3). COVID-19: COVID-19 outbreaks. https://ldh.la.gov/index.cfm/page/3997

[308] NC Department of Health and Human Services. (2021, August 2). COVID-19 Clusters in North Carolina. https://covid19.ncdhhs.gov/media/725/download.

[309] Nashville Metro Health Department (2020, November 30). *Metro Public Health Department Cluster Report Nov. 27*. https://www.asafenashville.org/updates/metro-public-health-department-cluster-report-nov-27/.

[310] Lan FY, Suharlim C, Kales SN, Yang J. (2020). *Association between SARS-CoV-2 infection, exposure risk and mental health among a cohort of essential retail workers in the USA*. Occup Environ Med doi:10.1136/oemed-2020-106774. https://pubmed.ncbi.nlm.nih.gov/33127659/

[311] COVID-19 outbreak LOCATIONS. COVID-19 Outbreak Locations | IDPH. (2021, August 6). https://www.dph.illinois.gov/covid19/outbreak-locations?regionID=0&rPeriod=1.

[312] Allan-Blitz L, Turner I, Hertlein F, Klausner J. (2020, December 11). *High frequency and prevalence of community-based asymptomatic SARS-CoV-2 Infection*. medRxix. https://doi.org/10.1101/2020.12.09.20246249.

In schools, this needs to be considered in the environment where masks are not mandated, students are not required to quarantine even if a student is an extremely close contact[313], and vaccines are not mandated. This has led to schools returning to remote learning due to outbreaks.[314]

OSHA further in the draft ETS specifies that oil and gas, postal delivery, janitorial services, law enforcement, agriculture, construction, and maritime services have risks. The fact that in non healthcare settings, cases and clusters have been seen in a variety of settings further demonstrates why the transmission of SARS-CoV-2 is dangerous. As OSHA concludes on page 109 of the draft ETS, in relevant part, "Multiple cross-sectional studies, occupational surveys, and news reports demonstrate high rates of COVID illnesses and fatalities in occupations that require frequent or prolonged contact with the public, those in which employees are required to work indoors in close proximity to one another, and those which involve cramped spaces and/or poor ventilation. The cases and clusters of COVID-19 in occupational settings have led to fatalities and serious illnesses, as well as loss of work due to illness and quarantine. The large numbers of infected employees suggest that SARS-CoV-2 is likely to be present in a wide variety of workplaces, so there is a critical need for the employee protections contained in this ETS."[315] The reality of this set of clusters suggests why OSHA should issue a rule that covers all workers. Where workers and people interact with others, the virus has an opportunity to spread.

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[313] Texas Educational Agency. (2021, August 5). Public Health Guidance. https://tea.texas.gov/sites/default/files/covid/SY-20-21-Public-Health-Guidance.pdf.
[314] Goldberg, D., Jr., J. P., & Payne, D. (2021, August 5). Chaos and confusion: Back to school turns ugly as delta rages. POLITICO. https://www.politico.com/news/2021/08/04/school-delta-variant-502331.
[315] https://downloads.regulations.gov/OSHA-2020-0004-1106/attachment_2.pdf

c. Healthcare Worker Occupational Risks

It can be said that in settings where individuals are known to be around someone suspected or confirmed to have SARS-CoV-2, workers in such settings are uniquely at enhanced risk if adequate precautions are not taken.[316] However, being a healthcare worker does not result in being put at an elevated risk of being exposed to COVID-19 in general, as stated in ground one of my petition.[317]

In section VIII-A of the ETS, OSHA states in exempting settings where healthcare is "This does not mean there is not a significant risk of COVID–19 infection in the settings exempted from this standard, and the OSH Act's general duty clause may require employers to take steps to protect employees even in settings where an exception applies."[318] "Normally, an agency rule would be arbitrary and capricious if the agency has relied on factors which Congress has not intended it to consider."[319] If OSHA persists in declining to determine whether or not a legally significant risk of inhaling SARS-CoV-2 resulting in a severe outcome covered by the OSH Act exists in settings exempted from the final standard, that determination would be arbitrary and capricious as a matter of law. As discussed in Section III-B of this brief, the draft ETS had three exemptions. OSHA did explain why the working alone exception did not meet the standard of grave risk and working from home appears to be generally exempt in this context under the OSH Act.[320] Finally, the the healthcare exemption and general section was about dealing with unique risks in the healthcare section.

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[316] Mark Ferris, Rebecca Ferris, Chris Workman, et al. *FFP3 respirators protect healthcare workers against infection with SARS-CoV-2*. Authorea. June 30, 2021. https://www.authorea.com/doi/full/10.22541/au.162454911.17263721/v2.
[317] https://downloads.regulations.gov/OSHA-2020-0004-1034/attachment_1.pdf
[318] 86 F.R. 32562
[319] *Motor Vehicle Manufacturers Assoc. of the United States, Inc. v. State Farm Mutual Auto. Ins. Co.*, 463 U.S. 29, 43 (1983)
[320] *Forging Industry Ass'n v. Secretary of Labor*, 748 F.2d 210, 214-15 (4th Cir. 1984)

One study notes that healthcare workers are being affected, but this affects individuals involved with triage particularly hard.[321] But while this is the case, it cannot be forgotten that fit testing staff has not been fit tested, and due to the exposure likelihood, it may be the case that COVID-19 precautions were inadequate. Notably, since the virus is airborne,[322] the question arises as to whether healthcare workers are at risk because of close and prolonged contact. Having a cough or sneeze or other difficulty breathing is not an elevated danger, given both the period of contagiousness is rather short[323] and because the entire concept of AGMP's is invalid, as stated in ground four of my petition.[324] Talking, shouting, yelling, and exercising are aerosol generating[325] and more dangerous than AGMP's.

The risk has been calculated based on Washington data, where a study showed through June 11, 2020 that physical proximity and exposure to disease were key factors.[326] This also predicted that healthcare workers, particularly dental workers, had elevated risk. While the industry sponsored analysis showed that dentists[327] and dental

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[321] Gómez-Ochoa, S. A., Franco, O. H., Rojas, L. Z., Raguindin, P. F., Roa-Díaz, Z. M., Wyssmann, B. M., Guevara, S., Echeverría, L. E., Glisic, M., & Muka, T. (2021). COVID-19 in Health-Care Workers: A Living Systematic Review and Meta-Analysis of Prevalence, Risk Factors, Clinical Characteristics, and Outcomes. American journal of epidemiology, 190(1), 161–175. https://doi.org/10.1093/aje/kwaa191

[322] Greenhalgh, T., Jimenez, J. L., Prather, K. A., Tufekci, Z., Fisman, D., & Schooley, R. (2021). *Ten scientific reasons in support of airborne transmission of SARS-CoV-2*. The Lancet, 397(10285), 1603–1605. https://doi.org/10.1016/s0140-6736(21)00869-2

[323] Mailonline, T. P. F. (2021, August 4). *Ten-day isolation could be slashed in half as studies show patients barely infectious after 5 days.* Daily Mail Online. https://www.dailymail.co.uk/news/article-9858501/Ten-day-isolation-slashed-HALF-studies-patients-barely-infectious-5-days.html.

[324] https://downloads.regulations.gov/OSHA-2020-0004-1034/attachment_2.pdf

[325] Coleman, K. K., Tay, D. J., Tan, K. S., Ong, S. W., Son, T. T., Koh, M. H., Chin, Y. Q., Nasir, H., Mak, T. M., Chu, J. J., Milton, D. K., Chow, V. T. K., Tambyah, P. A., Chen, M., & Wai, T. K. (2021). *Viral Load of SARS-CoV-2 in Respiratory Aerosols Emitted by COVID-19 Patients while Breathing, Talking, and Singing*. https://doi.org/10.1101/2021.07.15.21260561

[326] Zhang M. (2020). Estimation of differential occupational risk of COVID-19 by comparing risk factors with case data by occupational group. *Am J Ind Med*. 2021 Jan;64(1):39-47. doi: 10.1002/ajim.23199. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7753309/

[327] Araujo MWB, Estrich CG, Mikkelson M, et al. COVID-2019 among dentists in the United States: A 6-month longitudinal report of accumulative prevalence and incidence. *J Am Dent Assoc*. June 2021; 152(6):425-433. https://jada.ada.org/article/S0002-8177(21)00204-X/fulltext

hygienists are not disproportionately affected[328], the reasons are not as simple. The first reason is that dental work is not producing aerosols infectious with COVID-19.[329] Another reason is the risks of a patient who is seeking dental work having COVID-19 likely is not disproportionate compared to other workplaces. Third, notwithstanding that the patient is unmasked, certain precautions have been implemented in dental offices.

On autopsies, given the nature of the virus and the early peak viral load,[330] such a task is not likely to spread COVID-19. But it may be asked why, in the United States, caring for a patient known to have COVID-19 is not a risky event from a COVID-19 perspective? OSHA specifically claims that "[h]ealthcare employees are performing some job tasks that create an expectation of exposure to people or human remains infected with COVID-19. The nature of caring for a patient known to have COVID-19 or performing [a]n autopsy on someone who had COVID-19 increases the risk to employees performing that task."[331] In reality, caring for a patient who has COVID-19 usually involves wearing a respirator, such as a N95 mask, and this has been known for well over a year. They have been looking at reusing N95 masks for this reason.[332]

OSHA repeatedly relies upon studies focused on the first wave to demonstrate that healthcare workers are at greater risk. This is based on March and April, 2020,

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[328] Estrich CG, Gurenlian JR, Battrell A, et al. COVID-19 Prevalence and Related Practices among Dental Hygienists in the United States. J Dent Hygiene. February 2021; 95(1):6-16. https://pubmed.ncbi.nlm.nih.gov/34044974/

[329] Meethil, A. P., Saraswat, S., Chaudhary, P. P., Dabdoub, S. M., & Kumar, P. S. (2021). Sources of sars-cov-2 and other microorganisms in dental aerosols. *Journal of Dental Research*, 100(8), 817–823. https://doi.org/10.1177/00220345211015948

[330] Mailonline, T. P. F. (2021, August 4). *Ten-day isolation could be slashed in half as studies show patients barely infectious after 5 days.* Daily Mail Online. https://www.dailymail.co.uk/news/article-9858501/Ten-day-isolation-slashed-HALF-studies-patients-barely-infectious-5-days.html.

[331] 86 F.R. 32401

[332] Nida F. Degesys, M. D. (2020, July 7). *Correlation between N95 extended use and reuse and Fit failure in an emergency department.* JAMA. https://jamanetwork.com/journals/jama/fullarticle/2767023.

when N95 masks were not available in hospitals in New York City.[333] While OSHA can mention emergency medical services at high risk, studies show how with proper infection control, COVID-19 risks are mitigated.[334] In New York City, paramedics had very high test positivity rates[335] during the first wave. It is not coincidental that they were told to only wear N95 masks during AGMP's[336]. Subsequently, the fire department decided to switch to elastomeric masks.[337]

But how can a study showing that being a healthcare worker is not correlated with greater infection risk[338] be consistent with OSHA's position that healthcare workplaces are inherently more dangerous from a COVID-19 perspective compared to other workplaces or other places? Such a study would be inherently inconsistent with the intent of OSHA. Looking at the epidemiological evidence, with an understanding of the PPE used paints a picture that community transmission rates are important, as is contact with others, when someone is known or suspected to have COVID-19, risks are elevated, and respiratory protection is critical to protect against the virus.

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[333] James, C. (2020, April 4). ER doctor in New York Details DIRE supply shortages from the front lines of the coronavirus fight. *CNN*. https://www.cnn.com/2020/03/31/us/coronavirus-medical-shortages-us/index.html.

[334] Brown A, Schwarcz L, Counts CR, Barnard LM, Yang BY, Emert JM, et al. Risk for acquiring COVID-19 illness among emergency medical service personnel exposed to aerosol-generating procedures. Emerg Infect Dis. 2021 Sep [2021, August 9]. https://doi.org/10.3201/eid2709.210363

[335] Weiden, M et al., (2021, January 25). Pre-COVID-19 lung function and other risk factors for severe COVID-19 in first responders. *ERJ open research* 7(1): 00610-2020. https://doi.org/10.1183/23120541.00610-2020.

[336] Edelman, S., Vincent, I., Dorn, S., & Klein, M. (2020, April 4). EMTs, medics Defy 'DEADLY' FDNY order to not wear N95 masks. New York Post. https://nypost.com/2020/04/04/ambulance-workers-say-theyre-at-risk-as-the-fdny-limits-mask-use/.

[337] Tracy, T. (2020, November 10). FDNY EMTS, medics and FIREFIGHTERS getting new heavy Duty masks to FIGHT COVID. nydailynews.com. https://www.nydailynews.com/new-york/ny-fdny-new-covid-mask-protection-20201110-7ehwdcduwffcni3qigd2vp6dla-story.html.

[338] Jacob, JT et al., (2021, March 10). Risk Factors Associated With SARS-CoV-2 Seropositivity Among US Health Care Personnel. JAMA Netw Open. 2021; 4(3): e211283. doi: 10.1001/jamanetworkopen.2021.1283. https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2777317

In section VIII-A of the OSHA ETS states in exempting settings where healthcare is "This does not mean there is not a significant risk of COVID–19 infection in the settings exempted from this standard, and the OSH Act's general duty clause may require employers to take steps to protect employees even in settings where an exception applies."[339] "Normally, an agency rule would be arbitrary and capricious if the agency has relied on factors which Congress has not intended it to consider."[340] If OSHA persists in declining to determine whether or not a legally significant risk of inhaling SARS-CoV-2 resulting in a severe outcome covered by the OSH Act exists in settings exempted from the final standard, that determination would be arbitrary and capricious as a matter of law.

d. Congregate Living Facilities

One group of industries are at particularly dangerous risk. That is congregate care settings. Correctional facilities and homeless shelters are at elevated risk due to being congregate care settings. Studies based on homeless populations Ontario, Canada[341] and Paris, France[342] show increased exposure to individuals living in such settings, and clusters have been seen in both types of settings. While these settings may not be thought of as healthcare settings, it is true that many healthcare settings are in congregate care facilities, such as nursing homes.

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[339] 86 F.R. 32562

[340] *Motor Vehicle Manufacturers Assoc. of the United States, Inc. v. State Farm Mutual Auto. Ins. Co.*, 463 U.S. 29, 43 (1983)

[341] Richard, L., Booth, R., Rayner, J., Clemens, K. K., Forchuk, C., & Shariff, S. Z. (2021). Testing, infection and complication rates of COVID-19 among people with a recent history of homelessness in Ontario, Canada: A retrospective cohort study. *CMAJ Open*, 9(1). https://doi.org/10.9778/cmajo.20200287

[342] Roederer, T., Mollo, B., Vincent, C., Nikolay, B., Llosa, A. E., Nesbitt, R., Vanhomwegen, J., Rose, T., Goyard, S., Anna, F., Torre, C., Fourrey, E., Simons, E., Hennequin, W., Mills, C., & Luquero, F. J. (2021). Seroprevalence and risk factors of exposure To COVID-19 in homeless people in Paris, France: A cross-sectional study. *The Lancet Public Health*, 6(4). https://doi.org/10.1016/s2468-2667(21)00001-3

The risk also can be seen in the data from Illinois, significant clusters occurred in long term care, assisted living, skilled care, and developmental disabilities facilities.[343] These settings are largely in the health and social services category in the North American Industry Classification System (NAICS).[344] It should be noted that in Washington, where this breakdown was not provided, healthcare and support services were nearly double the rate of other care facilities.[345] OSHA does not need to reject the Washington data, but should read it in light of the data from other states.

4. Conclusion

As noted, OSHA must meet the following five prong test. Except for the discretionary reasons, OSHA should refer to the five prong test that I previously discussed. Except for the last prong, which will be subsequently discussed, the other prongs are clearly met.

The first two prongs require OSHA to identify a harm and that the harm is severe enough to be covered by the OSH Act. OSHA has done so in the emergency temporary standard rulemaking. “OSHA's determination is based on three separate manifestations of incurable, permanent, or non-fleeting health consequences of exposure to the virus, each of which is independently supported by substantial evidence in the record.”[346] OSHA continues in relevant part to describe these risks. “First, with respect to the grave health consequences of exposure to SARS-CoV-2, OSHA has found that regardless of

[343] COVID-19 outbreak LOCATIONS. COVID-19 Outbreak Locations | IDPH. (2021, August 6). https://www.dph.illinois.gov/covid19/outbreak-locations?regionID=0&rPeriod=1.
[344] US Census Bureau. (n.d.). 2017 NAICS Manual. North American Industry Classification System. https://www.census.gov/naics/reference_files_tools/2017_NAICS_Manual.pdf.
[345] Washington State Department of Health, & Washington State Department of Labor and Industries. (2020, December 17). COVID-19 Confirmed Cases by Industry Sector. https://www.doh.wa.gov/Portals/1/Documents/1600/coronavirus/data-tables/IndustrySectorReport.pdf
[346] 86 F.R. 32411

where and how exposure occurs, COVID-19 can result in death.… Second, even for those who survive a SARS-CoV-2 infection, the virus often causes serious, long-lasting, and potentially permanent health effects. Serious cases of COVID-19 require hospitalization and dramatic medical interventions, and might leave employees with permanent and disabling health effects. Third, even mild or moderate cases of COVID-19 that do not require hospitalization can be debilitating and require medical care and significant time off from work for recovery and quarantine. People who initially appear to have mild cases can suffer health effects that continue months after the initial infection…. Each of these categories of health consequences independently poses a grave danger to individuals exposed to the virus." My conclusion is that the answer is no.

The next question is whether being vaccinated reduces the risk of acquiring these three grave harms from COVID-19 adequately. I conclude that the vaccines are not adequate, but that they do provide a substantial reduction. The vaccines are safe and effective[347] although they are not adequate by themselves to eliminate the grave danger where community spread is occuring. If OSHA were to make such a determination, it would limit the steps that can be implemented beyond a vaccine mandate. The reason for that is that section 6(b)(5) of the OSH Act[348] mandates the standard that best protects workers, which, as will be subsequently discussed, mandates that the vaccines be mandatory for all workers with limited exception. Since once everyone is vaccinated, the danger authorizing OSHA to act is eliminated, OSHA

[347] https://downloads.regulations.gov/FDA-2021-P-0545-0001/attachment_2.pdf
[348] 29 U.S.C. §655(b)(5)

cannot go further and impose additional requirements, beyond some temporary measures while workers get vaccinated.

The next question is what level of exposure are required to put workers into such danger of getting severe consequences from the virus. The answer for this is not much when around someone who is contagious with the virus. Due to airborne asymptomatic spread, the answer is that it is not simple to detect when someone is at risk of inhaling SARS-CoV-2. As stated on page 152 of the draft ETS, "[t]he best available evidence on the science of transmission of the virus makes clear that SARS-CoV-2 is transmissible to all vulnerable persons in shared … settings, which can result in large-scale clusters of infections. Transmission is most prevalent in situations where people are close to each other, in enclosed areas, for extended periods of time. This scenario occurs in most workplaces across the nation, and can be exacerbated by, for example, poor ventilation, close contact with people who are suspected or confirmed to have COVID-19, and situations where aerosols containing SARS- CoV-2 particles are likely to be generated." Over a quarter of individuals who have the virus shed aerosols in a half hour when breathing[349]. As ground four of my petition rejects the narrow definition of close contact,[350] where six feet for fifteen minutes qualifies as a close contact, even before the B.1.617.2 variant, the standard is quite low.

The next question is whether workers are being exposed, and the determination of OSHA is that this is true for healthcare workers. The guidance from OSHA for no

[349] Coleman, K. K., Tay, D. J., Tan, K. S., Ong, S. W., Son, T. T., Koh, M. H., Chin, Y. Q., Nasir, H., Mak, T. M., Chu, J. J., Milton, D. K., Chow, V. T. K., Tambyah, P. A., Chen, M., & Wai, T. K. (2021). *Viral Load of SARS-CoV-2 in Respiratory Aerosols Emitted by COVID-19 Patients while Breathing, Talking, and Singing*. https://doi.org/10.1101/2021.07.15.21260561

[350] https://downloads.regulations.gov/FDA-2021-P-0545-0001/attachment_2.pdf

healthcare workplaces indicates this still is the case[351]. The epidemiological evidence, however, does not support OSHA's view of particularly elevated risk for healthcare workers. Instead, it supports the viewpoint that virtually all workers are endangered by occupational exposure to COVID-19. What is obvious is that individuals face a grave danger of inhaling SARS-CoV-2 when around others who may be contagious with the virus. This is a grave danger that directly leads to severe cases and death from the virus, as well as long COVID. While the likelihood of these consequences are greatly reduced when vaccinated, the vaccines do not provide adequate protection in a high spread environment.

B. Need for OSHA Action

1. Events leading up to the Rule

Under the Trump Administration, the goals were deregulatory.[352] This meant that OSHA would not be issuing binding regulations. On January 20, 2021, the transition of power occurred from President Trump to President Biden. The prioritization of the new Biden Administration was to implement on hundred days of mask wearing[353]. While OSHA was supposed to issue an emergency temporary standard, the administration

[351] Department of Labor. (2021, June 10). *Protecting Workers: Guidance on Mitigating and Preventing the Spread of COVID-19 in the Workplace | Occupational Safety and Health Administration.* https://www.osha.gov/coronavirus/safework.
[352] Bor, J. (2021, March 5). Trump's policy failures have exacted a heavy toll on public health. *Scientific American.* https://www.scientificamerican.com/article/trumps-policy-failures-have-exacted-a-heavy-toll-on-public-health1/.
[353] Jaffe, A. (2020, December 4). Among first acts, Biden to call for 100 days of mask-wearing. AP NEWS. https://apnews.com/article/joe-biden-donald-trump-jake-tapper-coronavirus-pandemic-fa365aa74f80e768bce3edc1649e4e8a.

has been pushing on the vaccines as a solution. This meant that the Administration postponed the rule[354] and which was due per executive order on March 15 until the CDC could issue guidance that allowed unmasking if vaccinated. Furthermore, states have taken approaches from California mandating vaccination of workers[355] to Montana where workers who are unvaccinated have a civil right to be treated the same as vaccinated workers[356]. Since the May 13 decision to unmask if vaccinated, it is clear that vaccinated individuals are more likely[357] to be afraid about COVID-19.

2. Agency Action is Required to Protect Workers

a. The Current Standards and Regulations are Inadequate

While OSHA cites why current regulations are inadequate, even for healthcare workers, the ETS is inadequate in many areas because it does not accept that all workers are at risk and that the virus is airborne. This was stated in grounds one and two of my petition, which are the principal flaws in the OSHA ETS.[358] Yet, my petition was also inadequate, since it did not mandate vaccination for all employees.

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[354] Rolfson, B, Rozen, C. (2021, April 6). *Labor Chief Walsh Puts Hold on OSHA Virus Rule for More Analysis.* Bloomberg Law. *https://news.bloomberglaw.com/safety/labor-chief-walsh-puts-hold-on-osha-virus-rule-for-more-analysis*.
[355] California mandates Covid-19 vaccine for healthcare workers. *Fisher Phillips*. (2021, August 6). https://www.fisherphillips.com/news-insights/california-mandates-covid-19-vaccine-for-healthcare-workers.html.
[356] Montana employers cannot treat employees differently based on vaccination status. *Baird Holm LLP*. (2021, June 9). https://www.bairdholm.com/blog/montana-employers-cannot-treat-employees-differently-based-on-vaccination-status/.
[357] Kaiser Family Foundation. (2021, August 4). Most unvaccinated adults don't believe the vaccines are very effective and see the vaccines as a greater health risk than covid-19 itself. https://www.kff.org/coronavirus-covid-19/press-release/most-unvaccinated-adults-dont-believe-the-vaccines-are-very-effective-and-see-the-vaccines-as-a-greater-health-risk-than-covid-19-itself/.
[358] https://downloads.regulations.gov/OSHA-2020-0004-1034/attachment_1.pdf

OSHA argues that certain standards may apply for COVID-19, but the following list is used below and cited by OSHA:

- “29 CFR part 1904, Recording and Reporting Occupational Injuries and Illnesses. This regulation requires certain employers to keep records of work-related fatalities, injuries, and illnesses and report them to the government in specific circumstances.
- 29 CFR 1910.132, General requirements—Personal Protective Equipment (PPE). This standard requires that appropriate PPE, including PPE for eyes, face, head, and extremities, protective clothing, respiratory devices, and protective shields and barriers, be provided, used, and maintained in a sanitary and reliable condition.
- 29 CFR 1910.134, Respiratory protection. This standard requires that employers provide, and ensure the use of, appropriate respiratory protection when necessary to protect employee health.
- 29 CFR 1910.141, Sanitation. This standard applies to permanent places of employment and contains, among other requirements, general housekeeping and waste disposal requirements.
- 29 CFR 1910.145, Specification for accident prevention signs and tags. This standard requires the use of biological hazard signs and tags, in addition to other types of accident prevention signs and tags.
- 29 CFR 1910.1020, Access to employee exposure and medical records. This standard requires that employers provide employees and their designated representatives access to relevant exposure and medical records.

- 29 CFR 1910.1200, Hazard communication. This standard requires employers to keep Safety Data Sheets (SDS) for chemical hazards, provide SDSs to employees and their representatives when requested, and train employees about those hazards."

Furthermore, the draft ETS cites specifically on page 169: "29 CFR 1910.133, Eye and face protection. This standard requires that employers ensure the use of appropriate eye and face protection."

As noted, OSHA has encountered significant obstacles to protecting workers from the occupational exposure of inhaling SARS-CoV-2 at work. I believe that this is due to lack of enforcement and not scientifically setting the proper standard. On pages 165-168 of the draft ETS, on page 32415 of the Federal Register, in ground one of my petition, on the Twitter feed @workingwcovid, OSHA has seen plenty of complaints. While I will not go through them here, they tend to show both a misunderstanding as to what measures are needed to protect workers and that measures are needed to protect workers. In addition, some standards, "while applicable to the COVID-19 hazard and important in the overall scheme of workplace safety, do not require employers to implement specific measures to protect workers from COVID-19. Further, as addressed in more detail below, even applicable regulations like the reporting requirements did not contemplate a hazard like COVID-19, and have proven to be difficult to apply to it."[359] As stated by OSHA, safety measure OSHA believes are appropriate to reduce transmission of COVID-19 "are not explicitly required by existing standards: none expressly requires measures such as facilitating vaccination, facemasks, physical

[359] 86 F.R. 32416

distancing, physical barriers, cleaning and disinfection (when appropriate), improved ventilation to reduce virus transmission, isolation of sick employees, minimizing exposures in the highest hazard settings such as aerosol-generating procedures on patients with suspected or confirmed COVID-19, patient screening and management, notification to employees potentially exposed to people with COVID-19, or training on these requirements."[360]

Notably, I do not agree with whether certain standards actually make a difference. "Thus, OSHA's efforts to enforce existing standards to address the COVID-19 hazard have been significantly hindered by the absence of any specific requirements in these standards related to some of the most important COVID-19-mitigation measures. The COVID-19 ETS addresses this issue by clearly mandating each of these necessary protections."[361] While this is referring to sanitization, and I disagree as to the necessity of this standard on grounds that contaminated surfaces to stop COVID-19 likely protects against a non-existent threat, due to the mode of transmission, the statement is accurate in general.

Second, I agree that we need clear standards to protect against COVID-19. This can be defined for the reasons cited in the OSHA draft ETS on page 174. As "existing standards do not contain provisions specifically targeted at the COVID-19 hazard, it may be difficult for employers and employees to determine what particular COVID-19 safety measures are required by existing standards, or how the separate standards are expected to work together as applied to COVID-19. As explained in more detail in the Need for Specific Provisions (Section V of the preamble), the infection control practices

[360] *id.*
[361] *id. at 32417*

required to address COVID-19 are most effective when used together, layering their protective impact. Because no such layered framework currently exists, the existing standards leave large gaps in employee protection from COVID-19. An ETS with provisions specifically addressing COVID19 hazards will provide clearer instructions to the average employer than the piecemeal application of existing standards. The ETS "bundles" all of the relevant requirements, providing a roadmap for employers and employees to use when developing a plan and implementing protections, so that employers and employees know what is required to protect employees from COVID-19. More certainty will lead to more compliance, and more compliance will lead to improved protection of employees."

I would note that much of the uncertainty is due to confusion over the mode of transmission by the CDC and WHO, in denying that inhalation of aerosols is how the virus spreads. Furthermore, the effectiveness of vaccines against transmission is not fully understood, but it is clearly less than 100%.

The third concern is that some standards concerning other hazards do not contemplate COVID-19. While OSHA may give cleaning and disinfecting, the enforcement of that standard may be lax at OSHA.In any event, disinfection is not an important precaution against COVID-19. Furthermore, other standards do not address the need to wear a mask.

As OSHA has stated, a fourth reason exists, which this ETS corrects for healthcare workers, only. "Fourth, the existing recordkeeping and reporting regulations are not adequate to help the employer or the agency assess the full scope of COVID-19 workplace exposures. The recordkeeping regulations were not written with the nature of

COVID-19 transmission or illness in mind. In order to adequately understand and thereby control the spread of COVID-19 in the workplace, it is critical that the employer has a record of all cases of COVID-19 occurring among employees; however, such information is outside of the scope of OSHA's existing recordkeeping requirements, which are limited to injuries or illnesses that the employer knows to be work-related. The existing regulations are premised on the assumption that employers can easily identify injuries or illnesses that are work-related, but COVID-19 transmission can occur in the workplace, the community, or the household, and it can be difficult to identify the point of transmission. In numerous investigations, OSHA has identified employee illnesses or deaths from COVID-19 that were not reflected in the employer's required recordkeeping logs because the employer was not able to determine whether the illness or death was work-related. The COVID-19 log required by the ETS will provide a fuller picture of the prevalence of SARS-CoV-2 in the workplace by requiring employers to record employee cases without a work-relatedness determination.

Furthermore, even where work-relatedness can be determined, the existing reporting regulations are also inadequate in ensuring OSHA has the full picture of the impact of COVID-19 in the settings covered by this standard because the regulations only require employers to report in-patient hospitalizations that occur within 24 hours of the work-related incident and to report fatalities that occur within thirty days of the work-related incident. But many COVID-19 infections will not result in hospitalization or death until well after these limited reporting periods; consequently they are not required to be reported to OSHA, which limits the agency's ability to fully understand the impact of COVID-19 on the workforce. In order to adequately understand and thereby control

the spread of COVID-19 in the workforce, it is critical that the employer has a record of all cases of COVID-19 occurring among employees and that OSHA is timely informed of all work-related COVID-19 in-patient hospitalizations and fatalities.

OSHA's existing recordkeeping and reporting requirements are also inadequate for addressing the COVID-19 hazard in the workplaces covered by the ETS because the current reporting structure does not require employers to notify employees of possible exposures in the workplace. While the recordkeeping requirements require employers to make illness and injury records available to employees, 29 CFR 1910.35(b)(2), they do not create an affirmative duty requiring employers to notify employees when they may have been exposed to another employee with the disease. Given the transmissibility of COVID-19, timely notification of an exposure is critical to curbing further spread of COVID-19 and protecting employees from the COVID-19 hazard.

Thus, OSHA's existing recordkeeping and reporting requirements are not tailored to address hazards associated with COVID-19 in the workplaces covered by the ETS. As a result, they do not enable OSHA, employers, or employees to accurately identify and address such hazards."[362] So while I agree with the conclusions that OSHA makes here as they apply to all workers, that specific requirements are not enough, I disagree with the reasoning. This does not negate the fact that "OSHA's experience has demonstrated that existing standards alone are inadequate to address the COVID-19 hazard."[363]

[362] *id.*
[363] *id.*

b. The General Duty Clause is Inadequate to Protect Workers

I explicitly wish to note that I agree the general duty clause is inadequate. While OSHA may provide some citations as to why, "Without the ETS, however, OSHA would have to cite the employer under the General Duty Clause for the much broader violation of failing to eliminate the recognized workplace hazard of COVID-19 infection. This would require OSHA to prove: (1) That the hazard of COVID-19 infection was present and recognized for employees at this particular healthcare workplace, and (2) that additional abatement methods would materially reduce the hazard, over and above the reduction achieved by the use of respirators as already required under 29 CFR 1910.134 for exposure to people with suspected or confirmed COVID-19."[364] For workers who are wearing a respirator pursuant to OSHA regulations, OSHA is unable to find such valid expert testimony because fit tested respiratory protection[365] is clearly adequate to protect workers when worn.[366]

Yet if the intent is to protect workers outside of this scenario, the OSHA ETS has the same problem, because the data does not shows that healthcare workers are disproportionately impacted in such a matter, as stated throughout my petition, this brief, and by looking at the relevant evidence.

Finally, a critical issue is the disagreement between the General Duty Clause and state laws. Requiring a company prohibited by state law from asking about vaccination status to require vaccination for certain services creates uncertainty and legal confusion for employers. When OSHA regulates directly, some of these issues will be resolved via

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[364] *i.d. at 32419-32420*
[365] 29 C.F.R. 1934
[366] Mark Ferris, Rebecca Ferris, Chris Workman, et al. *FFP3 respirators protect healthcare workers against infection with SARS-CoV-2*. Authorea. June 30, 2021. https://www.authorea.com/doi/full/10.22541/au.162454911.17263721/v2.

direct conflict preemption. If vaccinations are required by OSHA, provided that the OSHA requirement is valid, a state law which blocks vaccine mandates would be preempted. The general duty clause would not create a conflict preemption and an obstacle preemption would be difficult to prove. The requirements in the ETS to ensure paid time and recovery time for vaccination, for example, are crucial in implementing the vaccine mandate that OSHA is obliged to implement. The requirements to ensure employees get vaccinated otherwise fail to consider vaccine access, which the general duty clause may not require employees to provide.

c. OSHA and Other Entity Guidance Is Insufficient

While OSHA has issued guidance, along with the CDC, WHO, Center for Medicare & Medicaid Services (CMS), and the National Academy of Medicine, have issued guidance for employers to utilize. The WHO defines exposure in the workplace based on whether a meter apart and uses the mode of exposure in the workplace as through “respiratory droplets”[367]. Guidance from the American Conference of Government Industrial Hygienists guidance on respirators for workers has also been issued, and this series of guidance should be adopted. Notably, it differs very significantly from the WHO and CDC, who still refuse to accept that COVID-19 is airborne. The fact that airborne transmission means better masks are required[368] is not considered.

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[367] World Health Organization. (2020, June 26). Coronavirus disease (COVID-19): Health and safety in the workplace. World Health Organization. https://www.who.int/emergencies/diseases/novel-coronavirus-2019/question-and-answers-hub/q-a-detail/coronavirus-disease-covid-19-health-and-safety-in-the-workplace.

[368] Kwon, KS et al., (2020, November 23). Evidence of Long-Distance Droplet Transmission of SARS-CoV-2 by Direct Air Flow in a Restaurant in Korea. *J Korean Med Sci* 35(46): e415. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7707926/

The CDC has recognized that compliance with voluntary guidance is insufficient.[369] This can be described by a trip I made recently to an urgent care center. Checking in, behind plexiglass and wearing a gown plus a mask without gloves, I was directed to use a shared screen to sign in. Then, I sat in a waiting room where people were waiting for COVID testing, and while I was wearing a N95, others in the space were not except for the person escorting to patient rooms. When I got into my room, someone was wearing a gown clearly being reused and they put on gloves without first performing hand hygiene. The doctor came subsequently, and the gown was obviously being reused. The failure to implement appropriate precautions was apparent.

OSHA admitted that it "erroneously believed that it would be able to effectively use the non-mandatory guidance as a basis for establishing the mandatory requirements of the General Duty Clause, and informing employers of their compliance obligations under existing standards. As explained above, that has not proven to be an effective strategy. Moreover, when OSHA made its initial necessity determination at the beginning of the pandemic, it made an assumption that given the unprecedented nature of the COVID-19 pandemic, there would be an unusual level of widespread voluntary compliance by the regulated community with COVID-19-related safety guidelines…."[370] To be clear, the reason that this non-compliance is happening is irrelevant. When the D.C. Circuit said "[a]mple evidence in the record indicates a significant risk that some workers, who are actually being exposed to levels of [ethylene oxide] greater than the 10 [parts per million] "average" (yet within the 50 [parts per million] standard), currently

[369] Siegel, JD, Rhinehart, E, Jackson, M, Chiarello, L, and the Healthcare Infection Control Practices Advisory Committee. (2007). 2007 Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings. Centers for Disease Control and Prevention. https://www.cdc.gov/infectioncontrol/guidelines/isolation/index.html
[370] 86 F.R. 32421

encounter a potentially grave danger to both their health and the health of their progeny,"[371] the court was not saying why that was happening.

d. A Uniform Nationwide Response to the Pandemic Is Necessary To Protect Workers

Congress declared that the purpose of OSHA is "to assure so far as possible every working man and woman in the Nation safe and healthful working conditions and to preserve our human resources".[372] Yet, through the pandemic, we have seen that workers are not protected from the virus. While occupational exposure matters in the spread of the virus,[373] similar to how risks to hearing loss is not purely occupational. Yet while the OSHA occupational noise exposure rule[374] does not distinguish between occupations, this rule does. And premature reopening or relaxing of restrictions has led to increased spread[375] and more outbreaks. Lifting mask mandates in certain counties in Kansas[376] meant that transmission in those counties was significantly higher. This would likely also apply on the federal level. While OSHA notes that "In some states there are no workplace requirements at all,"[377] South Dakota never required businesses to close or reduce capacity.[378]

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[371] *Public Cit. Health Research Grp. v. Auchter*, 702 F.2d 1150, 1157 (D.C. Cir. 1983)
[372] 29 U.S.C. §651(b)
[373] Carlsten, C., Gulati, M., Hines, S., Rose, C., Scott, K., Tarlo, S. M., Torén, K., Sood, A., & Hoz, R. E. (2021). COVID-19 as an occupational disease. *American Journal of Industrial Medicine*, 64(4), 227–237. https://doi.org/10.1002/ajim.23222
[374] 29 C.F.R. 1910.95
[375] Hatef, E. et al., (2021, April). Early relaxation of community mitigation policies and risk of COVID-19 resurgence in the United States. Prev Med 145:106435. doi: 10.1016/j.ypmed.2021.106435 https://pubmed.ncbi.nlm.nih.gov/33486000/
[376] Van Dyke ME, Rogers TM, Pevzner E, et al. Trends in County-Level COVID-19 Incidence in Counties With and Without a Mask Mandate — Kansas, June 1–August 23, 2020. MMWR Morb Mortal Wkly Rep 2020;69:1777-1781. DOI: http://dx.doi.org/10.15585/mmwr.mm6947e2
[377] 86 F.R. 32422
[378] Vondracek, C. (2021, July 15). A look At Gov. Noem's claims that SD 'never shut down' For covid. The Mitchell Republic. https://www.mitchellrepublic.com/news/government-and-politics/7113680-A-look-at-Gov.-Noems-claims-that-SD-never-shut-down-for-COVID.

But while an emergency temporary standard is needed, the right guidance is needed. Employers need clear guidance as to what is needed to protect workers based on the hazards that actually exist. The guidance needs to provide adequate protection to all workers in settings where they are exposed. Clarity and consistency are needed, in how the virus spread, what precautions are needed to protect workers, and the obligations employers and employees have under section five of the OSH Act.[379]

Furthermore, while OSHA claims that a "[o]ne of the justifications for OSHA standards has always been to 'level the playing field' so that employers who proactively protect their workforces are not placed at a competitive disadvantage"[380]. Rather, Senator Egleton saw worker health and safety as "reasonable and necessary costs of doing business."[381] Furthermore, the proper standard "would also eliminate ... unnecessary burden on workplaces that are already struggling. ... [M]any employers operating in multiple states are faced with confusing and differing requirements from several of the Agency's State Plan States. This causes problems with uniformity and consistency and places an unnecessary burden on employers trying to protect their workers and do the right thing."[382] By eliminating unnecessary burdens on employers, that means employers can focus on what is needed.

Given the evidence occupational risks are seen in section IV-A-3 of this brief, it is clear workers are having occupational exposure to COVID-19 every day. I estimate that thousands, of employees covered by the OSH Act every day are likely getting infected

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[379] 29 U.S.C. §654

[380] 86 F.R. 32422 [internal citations omitted]

[381] *Am. Textile Mfrs. Inst.* v. *Donovan,* 452 U.S. 490, 521 quoting 116 Cong. Rec. at 717664m Leg. Hist. 1151

[382] ORCHSE Strategies. (2020, October 9). *"Petition to the U.S. Department of Labor—Occupational Safety and Health Administration (OSHA) for an Emergency Temporary Standard (ETS) for Infectious Disease."* https://downloads.regulations.gov/OSHA-2020-0004-0145/content.pdf

at work by the virus. Furthermore, a strong OSHA standard will help ensure that workers are not as likely to die if infected at work, and are less likely to get exposed at work.

e. OSHA's Other Previous Rationales for Not Promulgating an ETS No Longer Apply

It is undoubtedly correct that OSHA has "previously cited the need to respond to evolving scientific knowledge about the virus as part of its rationale for not issuing an ETS during the late spring of 2020. Knowledge of the nature of COVID-19 was undoubtedly less certain at the beginning of the pandemic when OSHA made its initial determination that an ETS was not necessary."[383] And while the guidance from the CDC indoors if unvaccinated may be relatively constant, even in the middle of March of 2020, it has been clear the virus spreads through the air[384]. OSHA guidance cited "the basic protections of face coverings, distancing, barriers, and hand hygiene.[385] The guidance, as updated on August 13, 2021, lists getting vaccinated, wearing a mask, staying six feet apart, avoiding crowds and poorly ventilated spaces, frequent hand washing, covering coughs and sneezes, cleaning and disinfecting, and monitoring your health daily. [386] The first four steps and the health monitoring are the crucial steps in stopping COVID-19. Furthermore, OSHA's claim that their "previous concern—that an ETS would unintentionally enshrine requirements that are subsequently proven ineffective in reducing transmission—has proven to be overstated"[387] is false. Given that droplet and contact transmission is unusual for COVID-19, as stated in Section IV-A-2-b of this brief,

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[383] 86 F.R. 32422
[384] Khamsi, R. (2020, March 14). *They say CORONAVIRUS Isn't Airborne-but it's Definitely borne by air.* Wired. https://www.wired.com/story/they-say-coronavirus-isnt-airborne-but-its-definitely-borne-by-air.
[385] 86 F.R. 32422
[386] Centers for Disease Control and Prevention (CDC). (2021, August 13). *How to Protect Yourself & Others.* https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/prevention.html.
[387] 86 F.R. 32422

the measures of plexiglass barriers and hand hygiene are not basic or critical at stopping COVID-19.

OSHA reasons that "[g]oing forward, further developments can be addressed through OSHA's authority to modify the ETS if needed, or to withdraw it entirely if vaccination and other efforts end the current emergency." While this approach seems reasonable, this is not a permissible interpretation of the statute. Under section 6(c)(2) of the OSH Act[388], the ETS "shall be effective until superseded by a standard"[389] under section 6(b) of the OSH Act. Furthermore, the statutorily required 30 day comment period under section 6(b)(2) of the OSH Act[390], prior to modifying or revoking a standard, limits the ability of OSHA to modify or revoke a standard in real time.

OSHA has several choices on how to proceed in light of this legally required delay. The only required actions by OSHA is to declare that virtually all workers are at grave risk of developing severe outcomes from COVID-19 if unvaccinated and that employers must ensure that employees, with limited exceptions, are vaccinated against the virus. Relevant evidence that a reasonable mind may accept as adequate exists to support either of the following inherently inconsistent and incompatible conclusions that (i) the vaccines adequately protect all workers; or (ii) the vaccines do not adequately protect all workers. If the vaccines are insufficient, relevant evidence that a reasonable mind may accept as adequate exists to support a conclusion by OSHA that the relevant risk applies (I) only to individuals being exposed to individuals suspected or confirmed to have COVID-19, (II) to all workers regardless of location or setting, or (III) the risk

[388] 29 U.S.C. §655(c)(2)
[389] *id.*
[390] 29 U.S.C. §655(b)(2)

applies to some workers and settings and a risk analysis is needed. OSHA can set up that risk analysis in a way that does not require 30 days of comment before changes are made.

f. In Combination, are the Guidance and General Duty Clause Adequate

"Early in the pandemic, OSHA took the position that existing standards, together with the combination of non-mandatory guidance and General Duty Clause citations, would be sufficient to protect employees so that specific mandatory requirements would not be necessary. In theory, where existing standards did not address an issue directly, the remaining regulatory gap could be filled by guidance from OSHA, which would provide notice of COVID-19 hazards and describe feasible means of abating them, enabling OSHA to later issue a General Duty Clause citation to an employer who had failed to follow that guidance."[391] These sentences are identical in the draft ETS and the ETS.

The decision to only apply the ETS to healthcare workers and healthcare support workers must be upheld if, and only if, OSHA has a valid basis that is supported by substantial evidence for distinguishing why the ETS is only needed in the healthcare sector. While the draft ETS is not an official agency position, differences between the draft ETS and the final version clearly can show a change in viewpoint and interpretation. It is true that "an agency changing its course by rescinding a rule is obligated to supply a reasoned analysis for the change beyond that which may be required when an agency does not act in the first instance"[392], the draft ETS was never rescinded, and OSHA initially decided not to regulate.

[391] 86 F.R. 32422-32433, draft ETS page 197
[392] *Motor Vehicle Manufacturers Assoc. of the United States, Inc. v. State Farm Mutual Auto. Ins. Co.*, 463 U.S. 29, 42 (1983)

However, this does not negate the accuracy on pages 81-82 of the draft ETS, where OSHA said “[t]he science of transmission does not vary by industry, nor does the severity of COVID-19 once an employee is infected”. If the science of transmission does not differ and the severity once infected does not differ based on industry, then singling out the healthcare industry requires a valid basis that does not contradict this accurate statement. The first basis is workers in the healthcare sector have elevated occupational risk compared to other workers. The second basis is that the ability of OSHA to enforce the rule is lower in the healthcare sector. Because OSHA decided to use an industry and settings based approach, it must also justify these determinations on an industry basis. In the draft ETS, on page 197, OSHA stated “OSHA's enforcement experience has now clearly disproven that theory.” While the ETS omitted the word “clearly”[393], it did not affect healthcare workers, which is “substantial evidence in the record considered as a whole”.[394] But that lowering of the standard has to be taken in context.

Two sentences later, in the draft ETS, OSHA states on page 197 “Despite publishing a voluminous collection of COVID-19 guidance online and investigating thousands of complaints, OSHA did not believe it could justify the issuance of more than six COVID-19 related General Duty Clause citations over the entire year-long span of the pandemic so far.” Looking at the working with covid feed. It appears that six allegations involve not quarantining in states with federal plans at non-healthcare locations by September of 2020. If OSHA cannot say that the general duty clause violation is established under such circumstances, then “[a]mple evidence in the record

[393] 86 F.R. 32433
[394] 29 U.S.C. §655(f)

indicates a significant risk that some workers … currently encounter a potentially grave danger to both their health and the health of their progeny."[395] In the case of ethylene oxide, OSHA waited three years[396]. While one of the statutory methods to protect workers under the OSH Act includes, in part, "establishing causal connections between diseases and work in environmental conditions",[397] we do not need to wait months to see the virus cause hospitalizations or deaths.[398] A year and a half into this public health emergency, OSHA cannot afford to wait longer.

g. Effect of Vaccinations on Importance and Scope of Regulation

i. Vaccine Effectiveness requires Broad Vaccine Mandate but not Vaccine Only Approach

In section IV-B-II-g of the ETS, OSHA discusses the vaccine developments. I discussed why the vaccines do not warrant a change in section IV-A-2-c of this brief. The vaccines are extremely safe[399]. But while OSHA can discuss whether the ETS changes the standard, it is important to discuss the standard. The first question is whether vaccines can be effective at stopping deaths, hospitalizations, and long COVID. I have declared to the FDA in a citizen petition that this is the case.[400] OSHA came out with the sentence "The very low percentage of breakthrough cases (illness among vaccinated people) have led to recent updates to CDC guidance acknowledging

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[395] *Public Cit. Health Research Grp. v. Auchter*, 702 F.2d 1150, 1157 (D.C. Cir. 1983)
[396] *id.*
[397] 29 U.S.C. §651(b)(6)
[398] Lu, J et. all. (2021, July 7). *Viral infection and transmission in a large well-traced outbreak caused by the Delta SARS-CoV-2 variant.* Virological. https://virological.org/t/viral-infection-and-transmission-in-a-large-well-traced-outbreak-caused-by-the-delta-sars-cov-2-variant/724.
[399] Person. (2021, July 6). Vaccine side effects vs. COVID-19 Damage. Healthline. https://www.healthline.com/health-news/vaccine-side-effects-vs-covid-19-damage-theres-no-comparison.
[400] https://downloads.regulations.gov/FDA-2021-P-0545-0001/attachment_2.pdf

vaccination as an effective control to prevent hospitalization and death from COVID-19 to such an extent that the CDC has concluded that most other controls are not necessary to protect vaccinated people outside healthcare settings."[401] This sentence has tremendous meaning on what OSHA should do.

First, the sentence focuses on the CDC's findings that breakthrough cases are a very low percentage of cases. The data on breakthrough infections is not being tracked in the US for results that do not result in hospitalization or death as of May 1, 2021.[402] While it has not occurred during the current wave, it is still dangerous. Since the danger covered is not strictly a COVID-19 infection, if the cases were transient and minor, it might not even count under the OSH Act.[403] But because I did not identify a simple COVID-19 case as a qualifying risk, as specified in section IV-A-2-a of this brief, because it is mild. Diana Berrent, founder of Survivor Corps, a grassroots movement of survivors of COVID-19 focused on Long Covid, is convinced that the CDC views non hospitalized cases as minor[404] and because asymptomatic cases can lead to long COVID.[405] I reject this analysis because it assumes cases cannot be mild. That a large percentage of cases are not mild, but result in long covid, is the strongest reason in my view as to why exposure to the virus constitutes a grave danger.

Second, the sentence vaccines are so effective that in most contexts additional mitigation is not needed if fully vaccinated. By statute, OSHA "in promulgating standards dealing with [exposure to SARS-CoV-2] shall set the standard which most adequately

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[401] 86 F.R. 32423
[402] Richmendezcnbc. (2021, July 28). CDC needs to start tracking all Covid breakthrough infections, Gottlieb says. CNBC. https://www.cnbc.com/2021/07/28/cdc-needs-to-start-tracking-all-covid-breakthrough-infections-gottlieb-says.html.
[403] *Fla. Peach Grow. Ass'n v. U.S. Dept. of Lab*, 489 F.2d 120, 131 (5th Cir. 1974)
[404] https://twitter.com/dianaberrent/status/1423790803437166599?s=20
[405] https://twitter.com/dianaberrent/status/1423322638647189512?s=20

assures, to the extent feasible, on the basis of the best available evidence, that no employee will suffer material impairment of health or functional capacity even if such employee has regular exposure to [SARS-CoV-2] for the period of his [or her] working life." [406] A statutory policy on how OSHA must do this is ""by providing medical criteria which will assure insofar as practicable that no employee will suffer diminished health, functional capacity, or life expectancy as a result of his [or her] work experience".[407] No other medical criteria exists other than being vaccinated. In Houston Texas, at United Memorial Medical Center hospitals, out of forty intensive care unit patients, over sixty percent of patients are between age 30 and age 45[408], and it would be very unlikely that includes unvaccinated workers exposed at workplaces covered by the OSH Act. On page 197 of the draft ETS, OSHA stated "Despite publishing a voluminous collection of COVID-19 guidance online and investigating thousands of complaints, OSHA did not believe it could justify the issuance of more than six COVID-19 related General Duty Clause citations over the [first year] of the pandemic so far."[409] Consequently, section 6(c)(2) of the OSH Act[410] requires OSHA to immediately issue an emergency temporary standard mandating all employers covered by the OSH Act take immediate action to ensure virtually all workers covered by the OSH Act get fully vaccinated against COVID-19 as soon as possible. This applies notwithstanding that the FDA has

[406] 29 U.S.C. §655(b)(5)
[407] 29 U.S.C. §651(b)(7)
[408] Gill, J. (2021, August 17). Inside a galveston ICU, young patients once considered safe from covid now desperately cling to life. Houston Chronicle. https://www.houstonchronicle.com/news/houston-texas/galveston/article/Inside-a-Galveston-ICU-young-patients-once-16388664.php.
[409] https://downloads.regulations.gov/OSHA-2020-0004-1106/attachment_2.pdf
[410] 29 U.S.C. §655(c)(2)

unreasonably delayed granting a COVID-19 vaccine full approval, which I have requested in a citizen's petition to the FDA.[411]

Third, the sentence refers to hospitalizations and deaths, but not long COVID as effectively controlled. The failure to discuss whether the vaccines reduce sufficiently the dangers of long COVID is required. OSHA held that "even mild or moderate cases of COVID-19 that do not require hospitalization can be debilitating and require medical care and significant time off from work for recovery and quarantine."[412] OSHA did not mention the risks of long covid. OSHA need to "to state candidly any assumptions on which it relies"[413]. This gives OSHA two options.

- OSHA can infer based on the low hospitalization or death rate if vaccinated that the likelihood of acquiring long COVID is reduced. While a cumulative analysis would be appropriate, this can be stated in very brief words. I recommend OSHA reject this option based on recent data showing that a surge in cases exists. If OSHA determines this is the case, all workplaces where every employee is vaccinated, or is exempt from vaccination under Federal Law, should be exempt from requirements of the ETS. Because OSHA mandating employers ensure all employees get vaccinated as soon as possible is legally required, no further action is required.

[411] https://downloads.regulations.gov/FDA-2021-P-0545-0001/attachment_2.pdf
[412] 86 F.R. 32411
[413] *United Steelworkers of Am., Etc. v. Marshall*, 647 F.2d 1189, 1207 (D.C. Cir. 1980)

- Alternatively, OSHA can presume based on the evidence that viral load initially is at similar levels[414], the viral load increased by the variants[415] and the multitude of methods for COVID-19 to spread,[416] infer that long covid is still a threat, and strong action is needed. Without such reduction, action to protect workers who are vaccinated is needed. This would be the better option for OSHA to implement and is the option that I will be operating under.

Fourth, in the sentence, CDC referred to healthcare settings as different for the need to implement reduced controls. Such reference signals that healthcare settings are different. In such a case, the risk analysis on why an elevated risk of transmission exists in such settings. If appropriate, additional industry specific guidance should be implemented for healthcare. I will be implementing analysis based on this to classify different industries based on how they differ in transmission risk, based primarily on NAICS classification. While a settings based approach will be used, certain industries will have a rebuttable presumption of being in each classification.

ii. Vaccine Uptake

OSHA in section 4-B-II-g of the draft ETS discusses the importance of the vaccine. “OSHA embraces the value of vaccination and views the ETS as essential to facilitating access to this critical control for those workers who wish to receive it while

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[414] Chia, P. Y., Xiang Ong, S. W., Chiew, C. J., Ang, L. W., Chavatte, J.-M., Mak, T.-M., Cui, L., Kalimuddin, S., Chia, W. N., Tan, C. W., Ann Chai, L. Y., Tan, S. Y., Zheng, S., Pin Lin, R. T., Wang, L., Leo, Y.-S., Lee, V. J., Lye, D. C., & Young, B. E. (2021). Virological and serological kinetics of sars-cov-2 delta variant vaccine-breakthrough infections: A multi-center cohort study. https://doi.org/10.1101/2021.07.28.21261295

[415] Lu, J et. all. (2021, July 7). *Viral infection and transmission in a large well-traced outbreak caused by the Delta SARS-CoV-2 variant.* Virological. https://virological.org/t/viral-infection-and-transmission-in-a-large-well-traced-outbreak-caused-by-the-delta-sars-cov-2-variant/724.

[416] Crook, H., Raza, S., Nowell, J., Young, M., & Edison, P. (2021, July 26). *Long covid—mechanisms, risk factors, and management*. BMJ. https://doi.org/10.1136/bmj.n1648

still protecting those who cannot be, or will not be, vaccinated."[417] In section 4-B-II-g-i of this brief, I rejected the mere encouragement of vaccines as a valid strategy. Furthermore, while the exemption of certain places where everyone is fully vaccinated or in some events exempting fully vaccinated workers from certain requirements, I decline to do that here. However, I recognize that my proposed COVID-19 rule, if adopted, will be used as a template for implementing an airborne pathogen rule, similar to the bloodborne pathogen rule, it can be used in that rule for certain pathogens where vaccines may not be mandatory.

In discussing vaccine access and education issues, since the COVID-19 vaccines should be mandatory, I do not believe that the education requirements should exist. I will be discussing the vaccine access concerns, however, later in the brief. While the vaccines take some time to become effective and the other issues are real, I believe that the framework below

V. Effectiveness of Tools for OSHA ETS

A. Introduction

1. Individual Analysis of Tools

I have decided that the effectiveness of certain tools needs to be discussed. I decided to closely review Section IV of the ETS because discussing the rationale sets up the framework for determining how the standard should be operated. I will first ask in

[417] 86 F.R. 32423

section V about the effectiveness of specific provisions separately. Then I will consider the feasibility of those standards, both technological and economic in section VI of this brief. In section VII, I will discuss additional requirements, which are legal based largely on the OSH Act. Finally, in section VIII, I will discuss the rule and draft a proposal for a new covid standard.

The first question is whether a specific provision has a benefit in stopping COVID-19. This is not a question as to the legality of a certain decision, or the feasibility, but whether scientifically, it would help do one of three ways. The first way is the tool will slow down transmission of the disease based on the proper mode of transmission. The second way is that the tool will identify cases and exclude them based on individual risk. The third way is that the tool will help individuals once exposed, which can be described as a vaccine, a post exposure prophylactic, or treatment. If a tool does not do one of these three things, it should not be incorporated into a standard. A standard "requires conditions, or the adoption or use of one or more practices, means, methods, operations, or processes, reasonably necessary or appropriate to provide safe or healthful employment and places of employment.."[418] In order for something to be reasonably necessary or appropriate, you need to have a reason to believe that it is necessary or appropriate.

2. Overlapping and the Hierarchy of Controls

"An effective infection control program utilizing a suite of overlapping controls in a layered approach better ensures that no inherent weakness in any one approach results in an infection incident. OSHA emphasizes that [they believe] each of the

[418] 29 U.S.C. §651(a)

infection control practices required by the ETS provide some protection from COVID-19 by themselves, but work best when used together, layering their protective impact to boost overall effectiveness."[419]

This reason I had to add the part about a belief is because OSHA appears to base many of the precautions on a hole in swiss cheese. Some of the layers in both the draft ETS and the ETS may be very thin and have only an outer shell. While that shell may be intact for some of these provisions, meaning they are useless, the shell may be broken for others, meaning they are harmful.

The next question is the hierarchy of controls.[420] This is defined by Cornell as elimination, which completely eliminates exposure, substitution which replaces the hazard with something safe, engineering controls which isolate the person through physical or mechanical means. Administrative controls change how people work, while PPE is worn to protect themself from the hazard. But airborne infectious diseases, such as SARS-CoV-2, are unique in that a person is a hazard unknowingly in many cases without being sick.[421] They are unique the virus is exhaled by breathing[422], which is needed to live, unlike other types of rules, meaning the source cannot be controlled in the way other toxic airborne chemicals can be controlled, because you cannot stop

[419] 86 F.R. 32426, OSHA draft ETS, page 206
[420] COVID-19 hierarchy of controls. COVID-19 Hierarchy of Controls | Environment, Health and Safety. (n.d.). https://ehs.cornell.edu/campus-health-safety/occupational-health/covid-19/covid-19-hierarchy-controls.
[421] Johansson, MA et al., (2021, January 7). SARS-CoV-2 transmission from people without COVID-19 symptoms. *JAMA Network Open*. 4(1): e2035057. doi: 10.1001/jamanetworkopen.2020.35057. https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2774707
[422] Coleman, K. K., Tay, D. J., Tan, K. S., Ong, S. W., Son, T. T., Koh, M. H., Chin, Y. Q., Nasir, H., Mak, T. M., Chu, J. J., Milton, D. K., Chow, V. T. K., Tambyah, P. A., Chen, M., & W0ai, T. K. (2021). *Viral Load of SARS-CoV-2 in Respiratory Aerosols Emitted by COVID-19 Patients while Breathing, Talking, and Singing*. https://doi.org/10.1101/2021.07.15.21260561

breathing. This also means that the same tool can be classified into two hierarchies of control.

- Elimination strictly is elimination of the virus, which means using a COVID free zone and travel restrictions to get rid of the disease in a particular area, or a Zero COVID strategy, and stop any community spread. In addition, teleworking or not in an area where others are around or share indoor air may be a form of elimination, although it is also a form of administrative controls when used to isolate a person or stop an outbreak.
- Substitution predominantly refers to getting a covid vaccine. While the Cornell guidance refers to this as an engineering control, since the vaccines cannot eliminate or reduce inhaling SARS-CoV-2, but make the exposure to the virus safer, they are not an engineering control. If the vaccines made workers legally adequate safe, even though they likely are not enough, then OSHA would stop at this step.
- Engineering controls use things such as improved ventilation, filtration, or going outside. Vaccines, in the context of reducing transmission, are a form of engineering control. Some other engineering controls are isolated spaces for certain workers, certain physical barriers to enforce physical distancing, or plexiglass when used after appropriate engineering analysis. Even wearing a mask or respirator as source control may be regarded as a form of engineering control when used as source control.
- Administrative controls include things like wearing a mask or respirator for source control, physical distancing, avoiding talking, singing, or shouting. It also includes

covid tests, screening for symptoms, triaging patients for COVID-19, or teleworking if exposed or positive.

- Personal Protective Equipment consists of wearing a mask or respirator, even though that can also be another hierarchy of controls, depending on how used.

Implementing the hierarchy of controls would require that telework be mandatory whenever possible indefinitely, in some sense. I decline to follow this hierarchy for reasons discussed in Section VIII-A of this brief.

B. Standard and Transmission based Precautions

Precautions are described as either standard based, meaning you do them for all patients regardless of diagnosis, or transmission based. “For Standard Precautions, guidance follows that a certain set of controls should be implemented to reduce infectious disease transmission regardless of the diagnosis of the patient, in part because there is always baseline risk that is not necessarily either obvious or detectable.”[423] Isolation precautions also exist for certain diseases. On isolation precautions, if they are selected for the proper mode of transmission, they are beneficial.

In discussing precautions, OSHA here mentions, despite that I found in section IV-A-2-b of my brief that determination “ For instance, SARS–CoV–2, the infectious agent that causes COVID–19, is considered to be mainly transmissible through the droplet route in most settings (though there is evidence for airborne transmission as noted throughout this preamble). Droplet transmission occurs by the direct spray of

[423] 86 F.R. 32426, OSHA draft ETS, page 207

large droplets onto conjunctiva or mucous membranes (e.g., the lining of the nose or mouth) of a susceptible host when an infected person sneezes, talks, or coughs. Droplet precautions are a suite of layered controls that are designed to prevent the direct spray of infectious material and supplement the suite of layered controls used for Standard Precautions. They are designed to protect workers from infectious agents that can be expelled in large respiratory droplets from infected individuals. These added interventions are implemented when infection is known or suspected and include placing patients in single rooms or physically distant within the same room, increased mask usage, and limiting patient movement. COVID–19 is considered capable of spreading through multiple routes of transmission, including airborne. Thus, the CDC recommends respiratory protection, isolation gowns, and gloves in healthcare settings to protect workers in those settings"[424].

This reasoning is based on splatter and uses the term "respiratory transmission" First, as to transmission based precautions, they can be described as droplet, contact, or airborne based. I believe droplet precautions are mostly miniature airborne precautions. This is similar to how in my past experience, even though standard precautions in Dentistry required wearing gloves, I did not generally see a gown worn because of risks of splatter. It should be noted that the bloodborne pathogen rule does not require workers at volunteer blood donor centers to always wear gloves.[425]

Finally, I will be specifying out the requirements of individual standards. In implementing the bloodborne pathogen standard, OSHA specifies[426] the standard precautions for blood and bodily fluids. I believe that using this standard to impose

[424] 86 F.R. 32426
[425] 29 CFR 1910.1030(d)(3)(ix)(D)
[426] 29 CFR 1910.1030

additional penalties for violation of OSHA's bloodborne pathogen standard is inappropriate.

C. Screening

Screening is a tool that allows someone to look for symptoms. This allows the finding of susceptible persons to exclude. While this may seem like it matters whether it is patient screening, triaging based on patients, employee screening, or other forms of screening, it is really the same process.

D. Personal Protective Equipment

1. Introduction

OSHA places out the following statement on PPE: "As the CDC explains, when people with COVID–19 cough, sneeze, sing, talk, or breathe, they produce respiratory droplets, which can travel a limited distance—thereby potentially infecting people within close physical proximity—before falling out of the air due to gravity."[427] This assumption is false. As described in Section VI-A-2-b of this rule, the virus is transmitted through the airborne route.

1. Respirators

While the standard PPE may seem confusing, it is important to note that respirators are the last tool we have. The reality is that respirators and other PPE are considered while the last tool we have, and under the hierarchy of controls, the least

[427] 86 F.R. 32431

effective, that does not mean that they are not effective. Workers need respirators in high risk situations[428]. When worn, however, respirators are the reason why our healthcare workers have not gotten infected around covid patients.[429] The surgical masks, eye protection, gloves or gowns, or ventilation could not protect healthcare workers sufficiently from the virus.[430] Consequently, respirators are a vital tool in stopping COVID-19. Furthermore, the weaknesses in the mini respiratory program described in section VI-G of the ETS are being addresses here.

2. Masks

The OSHA guidance provides guidance on masks. However, OSHA argues that "facemasks do not filter out very small airborne particles and do not provide complete protection even from larger particles because the mask seal is not tight".[431] This statement is inaccurate as "Masks always provide some partial protection against exhaled and inhaled aerosols, with the protection depending on the quality of the mask material, how well they fit (no gaps between mask and face), and the size of the aerosols that matter."[432]

3. Faceshields

OSHA acknowledges that "Although face shields were not found to be effective against smaller particles, which can remain airborne for extended periods and can

[428] American Conference of Government Industrial Hygienists. (2021, May 25). Covid-19 fact sheet: Workers need respirators. ACGIH. https://www.acgih.org/covid-19-fact-sheet-worker-resp/.
[429] Mark Ferris, Rebecca Ferris, Chris Workman, et al. *FFP3 respirators protect healthcare workers against infection with SARS-CoV-2*. Authorea. June 30, 2021. https://www.authorea.com/doi/full/10.22541/au.162454911.17263721/v2.
[430] *id.*
[431] 86 F.R. 32432
[432] Jose-Luis Jimenez *et. all*. (2021, August 13). *FAQs on Protecting Yourself from COVID-19 Aerosol Transmission: Version 1.88.* http://www.tinyurl.com/FAQ-aerosols.

easily flow around a face shield to be inhaled, the face shields were effective in blocking larger aerosol particles"[433] Since droplet transmission is not a significant threat, as described in section IV-A-2-b-iii of this brief, they have no use. Consequently, I will rejecting the decision in Section V-E-II of the ETS.

4. Other PPE

OSHA in Section V-E-III of the ETS describes gowns, gloves, and eye protections. Since they did not make covid specific arguments, itis being discussed in section VII-C of this brief.

E. Aerosol Generating Medical Procedures

Since as discussed in section IV-A-2-b-ii of this brief, AGMP's are a myth, special rules will not be implemented for them. Instead, I will be implementing a general rule for patients who may require airborne precautions. These precautions will, thus, be applied broadly to all COVID-19 patients, but not exactly.

F. Physical Distancing

While OSHA does recommend physical distancing, I will disagree on the reasoning as to why physical distancing is a valuable tool. The reasoning for physical distancing as a tool is better described as follows: "The 6 feet rule also helps with aerosols that do not settle to the ground because they are most concentrated close to

[433] 86 F.R. 32432

the person who released them, like cigarette smoke is most concentrated close to the smoker."[434]

G. Physical Barriers

OSHA states "When people with COVID-19 cough, sneeze, sing, talk, yell, or breathe, they produce respiratory droplets. Epidemiological research has found that most COVID-19 transmission occurs via respiratory droplets that are spread from an infected individual during close (within 6 feet) person-to-person interactions (CDC, May 7, 2021; CDC, May 13, 2021a; WHO, July 9, 2020). The amount of respiratory droplets and particles released when a person breathes is significant, and the amount increases when someone talks or yells (Asadi et al., February 20, 2019; Alsved et al., September 17, 2020; Abkarian et al., October 13, 2020)."[435] Except to the fact that respiratory droplets are aerosols as described in part IV-A-2-b, this is accurate.

When barriers are used properly, they can provide some protection. In a NIOSH study, physical barriers were shown in ideal circumstances to reduce transmission when used over a ten minute period.[436] First, "a smoke generator showed that the air generally flowed from behind the cough simulator past the barrier."[437] Second, two linearly directed coughs were used. Third, medium studies were shown to be best because they disrupted the direct airflow without creating the strong pressure to go over the barrier that larger barriers have. This directional airflow benefit was shown because

[434] Jose-Luis Jimenez *et. all*. (2021, August 13). *FAQs on Protecting Yourself from COVID-19 Aerosol Transmission: Version 1.88.* http://www.tinyurl.com/FAQ-aerosols.
[435] 86 F.R. 32446
[436] Bartels, J., Estill, C. F., Chen, I.-C., & Neu, D. (2021). Laboratory study of physical barrier efficiency for worker protection against sars-cov-2 while standing or sitting. https://doi.org/10.1101/2021.07.26.21261146
[437] *id.*

even if only a few inches over the head, the directed coughs were blocked from the linear path the airflow directed. Fourth, this did not consider employee or customer movement or the impact of breathing zones. Fifth, this did not suggest the manikins were breathing in air. Finally, as Jim Rosenthal points out, the airflow will still be directed towards the infected person.[438]

As a consequence, plexiglass should be limited. “Plexiglass barriers are generally useful to avoid direct droplet infection and direct aerosol transmission whenever people are in close proximity and distance cannot be kept. Therefore, it is recommended to use them as a direct transmission suppression tool at such places, such as a supermarket checkout. However, as aerosols follow the air movements indoors, the protective effects of the plexiglas barriers against aerosols will be limited. Plexiglas barriers alone are not a sufficient approach to protect against aerosol transmission. Their installation alone cannot protect against indoor aerosol transmission and should not be regarded as safe and sufficient protection.”[439]

They cannot replace the need for better masks, the need for considering direction of airflow, and improved ventilation. Furthermore, it cannot be assumed that a person will stay in one position at all times, and plexiglass does not consider leaving the area protected by the barriers. This does not change my analysis as to ground eight of my petition as to why plexiglass is harmful. Unless in a separate room, as a consequence, plexiglass will not be a substitute for masks or respirators. As a consequence, I do not believe barriers should be recommended.

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[438] https://twitter.com/JimRosenthal4/status/1423770515324420100?s=20
[439] Jose-Luis Jimenez *et. all*. (2021, August 13). *FAQs on Protecting Yourself from COVID-19 Aerosol Transmission: Version 1.88.* http://www.tinyurl.com/FAQ-aerosols.

H. Hand, Surface, and Air Hygiene

Keeping surfaces, hands, and disinfection may be able to clean surfaces when fomite transmission is occurring. Cleaning the air can be done through ventilation and filtration. Since the mode of transmission is through the air, not surfaces, as described in section IV-A-2-b of this brief, I will be recommending ventilation be implemented. This is not to say that hand hygiene is bad, because I recognize that it is already required, and any incremental compliance costs (see section VI-B-1 of this brief) will be zero for hand sanitizer.

I. Employee Benefits

While I discussed previously the benefits of screening, when an individual who is symptomatic, a contact, or may expose others is in the workplace or other shared settings, they can expose others. Furthermore, removal benefits provide a link to encourage people to not come to work sick. In addition, I recognize that this would also apply to vaccinated individuals. As a consequence, I will recommend the vaccine and medical removal benefits be included.

VI. Feasibility

A. Technological Feasibility

I assume that the entirety of the standard is technologically feasible.

B. Economic Feasibility

1. Draft ETS

OSHA in the draft ETS on page 460 indicated it did not perform an economic feasibility analysis. Instead, the words “[Forthcoming]” are included. Since OSHA did not perform an economic analysis, I will perform a brief guide on to how I see economic feasibility. This means that for workplaces not covered by the ETS, an economic analysis is required. Since the ETS found these requirements are generally feasible, I will presume that the requirements discussed in section V of this brief are economically feasible, even though a cost may be imposed on the employer. I recognize, however, that the costs of COVID-19 compliance with the requirements, when considered together, would be infeasible for many industries, and for a large number of businesses. This is especially true for small businesses. I will be focused on incremental cost for the purposes of this analysis. This means that a one time cost will be preferred over continuous costs.

2. Standard, Isolation Precautions, and PPE

I believe that this is a healthcare specific requirement. The requirement to maintain a sanitary condition. This requirement is based on the common requirement that states that “all places of employment shall be kept clean to the extent that the nature of the work allows”.[440] While certain requirements in standard precautions may apply in healthcare, I do not believe that this would apply generally outside healthcare. Furthermore, any incremental costs of preexisting requirements is zero.

[440] 29 C.F.R. 1910.141(a)(3)(iii)

On PPE, I have two concerns as to cost. They are that medical evaluations for respirators and using gowns as intended by OSHA would cause undue financial costs. For fit testing for a respirator, OSHA cites physiological burden on employers.[441] This argument is unfounded[442] as has been seen throughout the pandemic. However, this has also led to anti mask misinformation where an "industrial hygienist testified before the North Dakota legislature where they said we have to determine that "a person is healthy enough to work in a face covering. When you cover somebody's mouth or nose and expect them to go about their tasks, you are changing their respirations. It's harder to inhale and you have to forcibly exhale and we have given people heart attacks".[443] For using gowns, when worn for single use as appropriate, they may cost 75 cents. For a nurse seeing one patient an hour, that is one percent of their base salary if making 75 dollars an hour. Requiring four gowns an hour for something that is not contact driven is uneconomical. Consequently, both requirements will be eliminated.

3. Screening

Since OSHA placed employee screening in the draft ETS, and it could be self monitoring, I will presume such a requirement is feasible. For healthcare facilities and congregate care facilities, I also agree that it is feasible, although in the case of healthcare facilities, it will be slightly different. I do not believe that healthcare facilities and congregate care facilities would have an unfeasible cost. I cannot, however, see other businesses always being required to implement such a screening.

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[441] 29 C.F.R. 1910.134(e)
[442] Scheid, J. L., Lupien, S. P., Ford, G. S., & West, S. L. (2020). Commentary: Physiological and Psychological Impact of Face Mask Usage during the COVID-19 Pandemic. International journal of environmental research and public health, 17(18), 6655. https://doi.org/10.3390/ijerph17186655
[443] https://twitter.com/UniversalMaski2/status/1397002073162620935?s=20

4. Employee Benefits

While I support medical benefits, it will be important to note that I will be adopting the restrictions on benefits from OSHA because I do not intend to conduct feasibility analysis.

C. Economic Cost

I consider this rule feasible for employers based on implementing the following items. I will consider an employee who works 40 hours a week for an employer of $15 an hour and cannot work remotely.

- A covid-19 vaccine is provided. This takes two hours per occurrence and is taken twice. The cost is $60 for four hours for two shots and the employee does not work the . The employee's chances of inhaling COVID-19 are 30% over three months. With vaccination, the likelihood of symptoms are 25%. Without vaccination, the likelihood is 75%. The expected pay for the isolation is $857, which is saved 15% of the time. The benefits of getting vaccinated in such a scenario are $68 per employee.
- The cost of an elastomeric is $20 and filters cost $15 each. Two P100 filters can last for one year. Fit testing requires one hour of employee time at $15. The cost to fit test an employee on an elastomeric is $50 per employee. 25% of the time, an additional 30 minutes and new elastomeric is needed, which costs $15. The likelihood of exposure at work is 15% over three months, which is eliminated by wearing an elastomeric. The cost of the elastomeric protection are $130. The

expected cost of quarantine is $1200. The benefits of using an elastomeric mask in such a scenario are $50 per employee.

- The medical removal benefits for occupational exposures and when positive for COVID-19 are deemed feasible for OSHA for healthcare workers in the ETS and implicitly for all workers in the draft ETS.

Consequently, I conclude that wearing a fit tested elastomeric mask while at work and being fully vaccinated, plus the medical removal program, is economically feasible for employers in all industries.

VII. Legal Requirements

A. Home

First, as to the home, OSHA needs to consider occupational risks. The risk of getting COVID-19 at home is not affected by the occupational work being done in general at the home. If the exposure occurred outside of work hours, OSHA would not be responsible.[444] Consequently, working from home will be nearly entirely exempt from this rule.

B. Risk Assessment

In both the draft ETS and the ETS, a risk assessment is required. I will generally be requiring compliance with a risk assessment rule.

[444] *Forging Industry Ass'n v. Secretary of Labor*, 748 F.2d 210, 214-15 (4th Cir. 1984)

C. Bloodborne Pathegon Rune

OSHA states in part V-E-III of the ETS: “Gloves and gowns (overgarments) are the two most common types of PPE used in healthcare settings. A major principle of Standard Precautions is that all blood and body fluids, whether from a patient, patient sample, or infectious material, may contain transmissible infectious agents (Siegel et al., 2007). Therefore, gloves and gowns (overgarments) are required for certain examinations and all procedures. These include everything from venipuncture to removing medical waste to intubation. Similarly, gowns or similar protective clothing are necessary for any activities in which splashes or clothing contamination is possible. This applies as part of Standard Precautions as well as for care of patients on Contact Precautions where unintentional contact with contaminated environmental surfaces must be avoided (Siegel et al., 2007). Eye protection in the form of goggles or face shields (as discussed above) can be used with facemasks to protect mucous membranes (eyes, nose, and mouth) in situations where, for example, sprays of blood or body fluids are possible. CDC recommends that healthcare workers wear eye protection during patient care encounters to ensure eyes are protected from infectious bodily fluids.”[445] This repetition of some of the requirements of the bloodborne pathogen rule[446] means that this is a duplicative rule, and does not justify any additional requirement for contact based precautions. Consequently, it is unauthorized.

[445] 86 F.R. 32434
[446] 29 C.F.R. 1910.1030

D. Training

While OSHA includes training, I will not be including the requirement to train about emergency procedures or the benefits of vaccination. This is because I am concerned that a treatment is medical advice employers should not be required to train on for OSHA purposes.

E. Consensus Standards

I am explicitly rejecting the consensus standards. The reasonings are as follows:

- The scope is being restored to all workers based on the prior OSHA draft ETS. This was because of the consensus that healthcare workers are especially vulnerable is a very shallow analysis rejected in ground one of my petition.
- Vaccines are being mandated for workers because of the need to substitute for this extreme hazard, the fact that no other tool exists, and no other entity other than OSHA has the power to implement such broad vaccination requirements. In many industries, including healthcare, vaccine mandates are being recommended for all workers, and the President has done so. While I support vaccine mandates independently of the other entities, they are not enough.
- As to non pharmaceutical interventions, I am adopting the recommendations of the American Conference on Government Industrial Hygienists. The recommendations from the CDC, WHO, and various other entities that refuse to declare explicitly that COVID-19 is airborne and transmits from person to person through inhaling shared air almost exclusively is not entitled to deference.

Workers deserve a rule based on hazards that exist, not perceived hazards of hygiene theater and droplet dogma.

- As to a close contact, I am deliberately using the shared air definition from measles because that is the most accurate description and no amount of exposure to the virus SARS-CoV-2 is safe.
- As to the testing, vaccine boosters, removal period, diagnosis, and other epidemiological questions, while they should be included, I do not wish to include them here. The guidance can change, and I do not have specific recommendations. I recommend using interpretive guidance so that the 30 day period for comments is not needed and healthcare workers can use their professional judgement.

VIII. Scope and Application

A. Arrangement

For ease of access, all proposed will be in bold, underlined and offset to be clearer. I accept that some standards should be universal, because they are necessary to stop COVID-19. Since certain items are needed to protect against COVID-19 in every setting, a general requirements section will be included. However, because this should not give OSHA "unrestrained power over American industry"[447], only a few standards will be put into a general section. Instead, I have chosen to require employers to conduct a risk analysis, and implement additional precautions when an unacceptable

[447] *Industrial Union Department v. American Petroleum Institute*, 448 U.S. 607, 645 (1980)

risk still remains of infectious diseases, in a separate section. In addition, since some settings and industries have different risks and feasibility constraints, I will be including several setting specific regulations. A separate respiratory standard will also be included in light of concerns with adoption of the normal respiratory protection standard.[448] Finally, an incorporated by reference section will be included.

I designed this in an attempt to be transparent and allow OSHA to implement a model to expand this to all airborne pathogens, in other words, I will be recommending that OSHA implement a standard in Part U that can be used as a model to protect against other airborne infectious disease standard. For that reason, I looked at section 1910.1030, which is called “Bloodborne pathogens” as a model. That OSHA rule covers a mode of transmission, which in the guidance on how COVID-19 spreads, the CDC calls a “way”[449]. I decided to name the illness and mode of transmission. Consequently, I will be recommending renaming subpart U as follows:

Subpart U: Airborne Pathogen Covid-19.

B. General Section

1. Overview and Scope

I decided that only a few requirements should be required here, which are described below. I believe some provisions should be permanent while others may not. While I believe all workers should be required to wear a mask right now (and others around workers, for that matter), due to a surge in cases, concurring with OSHA

[448] 29 C.F.R. 1910.134

[449] Centers for Disease Control and Prevention. (2021, May 7). How COVID-19 spreads. https://web.archive.org/web/20210508003348/https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/how-covid-spreads.html.

leadership under the Obama Administration[450], I will not be putting a permanent mask in all scenarios requirement because such a mask requirement would be intrusive. This will be entitled the following:

1910.501. General Requirements.

First, you need to define the scope. I will be using a broad scope to cover all workers. This scope was initially based on the draft ETS proposed section 501(a). While I am going to base it on all workers, I will be including more exemptions than the OSHA draft ETS includes. That is because I am attempting to make clear that employers do not have control over all places of employment. This will cover the full scope of employees covered by the OSH Act with limited exceptions.

1910.501(a) Scope.

1910.501(a)(1) In General.

Except as elsewhere provided in subsection (a) of this section, this subpart shall apply to all employers and all places of employment.

I decided to include the following exception to the subpart based on the fact that COVID-19 requires interaction between individuals. I first included an exception at home which does not include when coworkers, clients, but allows contactless deliveries, based on the intent which is that true telework or remote work should be exempt when all work is performed in that manner.

1910.501(a)(2) Exemptions from Airborne Pathogen Rule.

Subpart U does not apply to any employee who exclusively works in one of the following settings:

[450] Barab, J., Michaels, D., The Triumph of Doubt: Dark Money and the Science of Deception. (2021, May 21). CDC's mask Guidance Ignores Workers' COVID-19 Risk. *Time*. https://time.com/6050445/cdc-mask-guidance-workers/.

(i) In their own home remotely. This exception does not apply when a person (other than a member of the same household) is present in the home while work is occurring who is a coworker, client, supervisor, or other person involved in the person's employment.

This is designed so that working from home and inviting people to their home as apart of their work is not included in working from home. The second exemption is also based on the removal of the household as a unit of concern based on the same reasoning as to why the home is excluded. It also includes a requirement for allowing the air to filter out.

(ii) Where there is only one employee at the workplace and no other people are in the workplace. For this purpose, members of the same household shall be disregarded. When the workplace is controlled by the employer, if the air is shared in any part of the workplace, this exemption only applies if the employer ensures that a sufficient time elapses between uses as the Effective Air Change Chart incorporated by reference in section 505(a) of this subpart.

The last exception is the employee flexibility exception. It is based on the fact that employers who could choose to work from home or alone but do not because they might be running an erin, for example, and may be using the phone to communicate, or goes to the park for a change of scenery, does not have occupational exposure.

(iii) When an employee can perform work as effectively in a place described in subparagraph (a)(2)(i) or (a)(2)(ii) but for reasons other than to benefit the employer, choose to work elsewhere. This exception does not apply

when a person (other than a member of the same household) is present in the home while work is occurring who is a coworker, client, supervisor, or other person involved in the person's employment.

The next exemptions will be made so that when the requirements cannot be maintained, only the vaccination, medical removal, and exposure rules apply.

(3) An employee working in a setting described in paragraph (a)(2) some of the time, but not all the time, shall be exempt from this rule except for the requirements of this subpart except subdivision (c) of this section while working in a location described in paragraph (a)(2).

Furthermore, I will conclude that we need to define what constitutes an airborne infectious disease. I will limit the rule to COVID-19, so it will say the following:

1910.501(b) Airborne Pathogen. For purposes of this subpart, an airborne pathogen shall mean COVID-19.

2. Vaccines

I conclude that vaccines should be required. I would note that since section V-A-2 of this brief suggests that the vaccines are a substitution on the hierarchy of controls. Furthermore, while I did title section IV-A-2-b-v as “Airborne Transmission Risks are Unacceptable”, the fact that the virus spread nearly exclusively via the airborne route is irrelevant to mandating the vaccines, given the high transmissibility of the virus. As a consequence,

(c) Vaccinations.

(1) Access. Each employer shall ensure that employees have sufficient access to all vaccines recommended for protection against airborne

pathogens. The employer must provide reasonable paid leave for employees to get vaccinated and paid time off for any side effect following vaccination. Employers may require that a person get multiple vaccinations at the same time, if medically appropriate, for protection against multiple airborne pathogens.

(2) Mandate. Each employer shall ensure that all employees get fully vaccinated against COVID-19. This does not apply to employees covered by the ministerial exception for a religious organization, but does cover employees exempt pursuant to policy under 29 C.F.R. 1975.6. For purposes of this rule, fully vaccinated shall mean one of the following:

(i) Completion of any vaccine series granted emergency use authorization or full approval by the FDA or WHO.

(ii) Two doses of either Pfizer or Moderna vaccine, which may be interchangeable.

(iii) One dose of a Janseen vaccine.

(iv) One dose of a Pfizer or Moderna vaccine after having been infected previously.

3. COVID-19 Plan

I choose to adopt the recommendation for a COVID-19 plan from OSHA with slight changes. The reason is that I recognize that some standard being implemented will not be needed at stopping transmission of COVID-19. Furthermore, given the privacy issues and administrative tasks that vaccinations involve, that employers have incentives to be economical in administering vaccines to employees, and that a broad

anti retaliation provision will be maintained, I do not believe this plan should discuss vaccines. Consequently, I will adopt the general plan guidance with slight modifications, given in section 501(c) of the draft ETS, which will be called an airborne pathogen plan due to the intent

(d) Airborne Pathogens Plan.

(1) The employer must develop and implement an airborne pathogen plan for each workplace. If the employer has multiple facilities that are substantially similar, its COVID-19 plan may be developed by facility type rather than by individual workplace so long as all required site-specific information is included in the plan.

(2) If the employer has more than 10 employees, the airborne pathogen plan must be written.

(3) The employer must designate one or more workplace safety coordinators to implement and monitor the airborne pathogen plan developed under this section. The identity of the safety coordinator(s) must be documented in any written airborne pathogen plan. The safety coordinator(s) must have the authority to ensure compliance with all aspects of the plan.

(4) The employer must conduct a workplace-specific hazard assessment to identify potential workplace hazards related to transmission of airborne pathogens.

(5) The employer must seek the input and involvement of non-managerial employees and their representatives, if any, in the hazard assessment and the development and implementation of the airborne pathogen plan.

(6) The employer must monitor each workplace to ensure the ongoing effectiveness of the airborne pathogen plan and update it as needed.

The next step of the COVID-19 plan is being rejected, based on the need for doing the risk assessment. This is based on minimizing the risk of transmission.

(7) The COVID-19 plan must address the requirements of this subpart except any requirements which are otherwise excluded from being required to be included in an airborne pathogen plan. The plan must specifically address each requirement in section 502.

(8) When employees of different employers share the same physical location, each employer must effectively communicate its airborne pathogen plan to all other employers at the same location, coordinate to ensure that each of its employees is protected as required by this section, and adjust its airborne pathogen plan to address any particular hazards presented by the other employees. Such employees must also have a way of expeditiously notifying other employers of positive cases and of other deficiencies in the plan.

The next case requires the ability to withdraw and contains an exception for first responders.

(9) An employer with one or more employees working in a physical location controlled by another employer must have a plan for withdrawing

employees if the protections against an airborne pathogen are inadequate. This does not require first responders to immediately withdraw from their immediate response if such withdrawal may be unsafe or worsen the emergency.

4. Exposure to a Case

"Vaccination does not eliminate the need for layered controls for healthcare workers exposed to COVID-19 patients, which can result in exposures that are more frequent and potentially carrying higher viral loads than those faced in workplaces not engaged in COVID-19 patient care."[451] Accordingly, I will be requiring a measure that is clear to implement. Consequently, I will be imposing special rules.

(e) Exposures.

(1) Known exposure. When the employer knows or expects that an employee will be or is being exposed to someone who may be infectious regarding an airborne pathogen, the employee must be wearing fit tested respiratory protection as described in section 504(b) of this subpart.

This next requirement is to require employees to comply with section 655(c). It states specifically:

(2) Exposure: When an employer becomes aware that an employee is exposed to an infectious pathogen, the employer must comply with the requirements of this subsection. A person shall be deemed exposed to an airborne pathogen when they share the air with someone who is suspected or confirmed to have an airborne pathogen exposed to covid-19, or the

[451] 86 F.R. 32427

employee, before the Effective Air Change Chart incorporated by reference in section 505(a) of this subpart if known, or two hours, whichever is less. For an open outdoor area, five seconds may be assumed as appropriate. A person wearing fit tested respiratory protection must not be deemed exposed when the protection is so worn, nor such time considered in determining exposure.

(3) Other employers: When an employer is aware that employees of other employers are exposed at work, the employer aware shall notify that worker's employer for compliance with the requirements of this section.

(4) Records. The records of exposure shall specify whom was positive, the date, time, and duration of exposure, the locations the person was, any activities that affect respiratory production (such as talking, singing, yelling, exercise), distance away from the employee, if known, the ventilation levels in the setting if known, and any face covering being worn, and quality, if known. Any employer shall be entitled to a copy of such records, except the identity of the person who was infectious, which shall not be disclosed. Such records shall be maintained notwithstanding the requirements of 29 C.F.R 1904 subpart B. When discussing distance away, the employer shall only provide such information to the employer. Unredacted records must be expeditiously disclosed, upon request, to government approved contact tracers, OSHA, a state equivalent for OSHA, the CDC, NIOSH, or a state, tribal, or local public health department.

The next requirement is for employers who are exposed. I deliberately based this off of the requirements in section 657(c)(2)

(5) Corrective Action. An employee must take corrective action as required in subsection (f).

(6) Report. The existence of a positive test and the records required to be created shall be reported as soon as practical to OSHA within twelve hours of when the employer discovers the employer is infected with an airborne pathogen.

5. Medical Removal

This is intended for when an employee becomes infected by an airborne pathogen. It requires the employer to comply with certain rules.

(f) Medical Removal.

(1) Monitoring. An employee shall self monitor for symptoms for airborne pathogens. If the employee has symptoms of an airborne pathogen which are required to be reported, they must notify the employer.

(2) Removal. An employee must be removed from the workplace if the person:

(i) tests positive for an airborne pathogen.

(ii) is told by a healthcare provider that they have an airborne pathogen.

(iii) is required to quarantine or isolate due to an airborne pathogen by a government contact tracing authority.

(iv) has symptoms of an airborne pathogen that require removal from the workplace.

(v) is required to be removed pursuant to subsection (e) of this section.

(3) Test.

(i) The employer may require an employee removed as provided in subparagraph (f)(2)(iv) to get tested for that airborne pathogen. If the test is negative, the employee can return to work immediately if removed.

(ii) Any test required under this section shall be without cost to the employee.

(iii) An employer is not required to compensate an employee who declines to take a test under this section as provided in paragraph (4).

(4) Medical Removal Benefits.

(i) If an employee is removed as provided under subsection (f)(2)(v), the employer shall continue to provide the benefits to which the employee is normally entitled and must also pay the employee the same regular pay the employee would have received had the employee not been absent from work**. If the employee becomes infected, the compensation shall continue during the period of isolation for the employee.**

(ii) If the employee is removed as provided under subsection (f)(2)(i), (f)(2)(ii), (f)(2)(iii), or (f)(2)(iv), except as provided in paragraph (i) of this subparagraph, he employer shall continue to provide the benefits to which the employee is normally entitled and must also pay the employee the same regular pay, up to $1400 per week, the employee would have received had the employee not been absent from work, if the employer has over ten employees.

(iii) If an employee is able to work in a setting in accordance with subsection (a)(2) of this section, an employer may require such work to occur and compensate in order to be entitled to compensation pursuant to this subsection.

This next provision makes clear that an employee is expected to continue to work from home and a benefit for employee transportation is not required. This is because an employee should be staying home during this period.

(iv) An employer may deduct any commuting costs from their regular pay saved by an employee on account of not working and is not required to compensate workers for transportation costs, except if the employer seeks a test required by the employee. This deduction shall be taken into account before limiting the pay to $1400 per week, if applicable.

(v) An employer may deduct any paid sick leave or other income earned, or public benefit available for an employee eligible to be earned, during the absence from work.

(5) Reinstatement. Whenever an employee returns to the workplace after any removal under this section, that employee must be treated as if the employee took leave pursuant to the Family and Medical Leave, This applies even if the employer is otherwise exempt from the provisions of that act.

This next section requires reporting in the case of any case. It excludes cases where the link was not related to the workplace, and applies a presumption that a place is

(6) Report to OSHA. An employer shall record and notify OSHA expeditiously, but in any event, within 6 hours of determining an employee is required to be excluded under paragraph (f)(2). An employer is not required to report when an employer is excluded because:

(i) the tests positive for an airborne pathogen or is told by a healthcare provider that they have an airborne pathogen, provided the employer did not work during the incubation period.

(ii) is required to quarantine due to an airborne pathogen by a government contact tracing authority unless the employer determines it occurred at the workplace.

(iii) had symptoms of an airborne pathogen that required removal from the workplace, but was tested and tested negative.

6. Outbreak

This is intended to give OSHA, the CDC, as well as, state, local, and tribal governments the ability to declare that an outbreak occurred and that a business is

essential. It imposes requirements on such businesses during an outbreak to protect everyone present.

(g) Outbreak.

(1) Declare Outbreak.

(i) A hospital or congregate living facility may declare that they are in an outbreak without seeking government approval. Upon making such declaration shall be deemed to be a request for an essential workplace exemption

(ii) OSHA, a state equivalent for OSHA, the CDC, NIOSH, or a state, tribal, or local public health department may declare that an outbreak has occurred at a workplace.

(iii) An employer, employee, or employee organization may request OSHA declare an outbreak.

(2) Requirements for an outbreak. Any employer who has been declared to be in an outbreak by an entity other than OSHA shall notify OSHA within 6 hours of learning about such status.

(3) Closure in Outbreak. OSHA may order a temporary closure of a workplace or impose additional temporary conditions in lieu of closure that an employer must comply with. An employer may elect to close in lieu of complying with such conditions. Any employer who closes must deem such closure as if all employees were removed pursuant to subsection (f)(3)(iii) for the duration of the closure.

The next provision provides for what happens in an essential business. It contains requirements for governmental approval and specific permission.

(4) Essential employer exception.

(i) A hospital or congregate living facility that declares an outbreak shall be deemed to be closed and granted an essential employer exception to closure. Such declaration shall declare, under the penalties of perjury, that the employer has insufficient staff to care for patients due to an airborne pandemic. The declaration must be signed by the chief executive officer of the hospital or congregate living facility.

(ii) Any other employer who is declared essential by the Secretary of Labor, OSHA, a state equivalent, the CDC, NIOSH, a state, tribal, or local public health department, a governor, or a locally elected official may be granted an essential employer exception to closure.

(iii) A declaration of an essential employer exception to closure under paragraph (4)(ii) may be revoked by OSHA at any time.

(iv) A declaration that a workplace is essential, or a declaration under the penalty of perjury that a staffing shortage exists, shall last no longer than thirty days.

(5) Exemption for essential employer program.

(i) Quarantine or isolation. An employer open under the essential worker program may exempt itself from the requirement for removal under subdivision (f)(2), other than subdivision (f)(2)(i), provided the

employer has used every reasonable effort to have workers (including hiring temporary workers) work instead of such workers.

(ii) Essential workers. Only workers who are essential to the operations of the essential business and who cannot telework may come to work.

(iii) Testing. Testing must be performed on a frequent basis, or as otherwise directed by OSHA or another government agency.

(iv) Physical Distance. Each person shall maintain physical distance of at least six feet, or if infeasible, the maximum distance feasible.

(v) Ventilation. The employer shall maximize the tools of ventilation and filtration, as well as going outdoors, to the extent feasible.

(vi) Respiratory protection. The employer shall ensure that each person present at the workplace wears respiratory protection. Employees shall be provided fit tested respiratory protection as soon as practical. This does not apply to patients at a hospital or residents at a congregate living facility.

(vii) Hospital and Congregate Living Facility. Each hospital or congregate living facility shall ensure that the respiratory protection provided is a tight fitting respirator. Any valve shall be covered by a medical mask taped to cover the valve without any gap with medical grade tape. The mask may be cut to a smaller size for such purpose. If wearing a powered air purifying facility, each person present shall

also wear an unvalved respirator underneath the powered air purifying respirator.

7. Ventilation

(e) Ventilation. Employers who own or control buildings or structures with an existing heating, ventilation, and air conditioning (HVAC) system(s) must ensure that:

(1) The HVAC system(s) is used in accordance with the HVAC manufacturer's instructions and the design specifications of the HVAC system(s);

(2) The amount of outside air supplied to the HVAC system(s) is maximized to the extent appropriate and compatible with the HVAC system's capabilities;

(3) All air filters are rated Minimum Efficiency Reporting Value (MERV) 13 or higher, if compatible with the HVAC system(s). If MERV-13 or higher filters are not compatible with the HVAC system(s), employers must use filters with the highest compatible filtering efficiency for the HVAC system(s);

(4) All air filters are maintained and replaced as necessary to ensure the proper function and performance of the HVAC system(s); and

(5) All intake ports that provide outside air to the HVAC system(s) are cleaned, maintained, and cleared of any debris that may affect the function and performance of the HVAC system(s).

Note: Employers may consider energy efficiency among other reasons as for not maximizing the use of outdoor air.

8. Training

This section is designed to implement training requirements and an anti retaliation program, as recommended by OSHA.

(i) Training and anti-retaliation.

(1) Anti retaliation. The employer must not discharge or in any manner discriminate against any employee for exercising their right to the protections required by this section, or for engaging in actions that are required by this section

(2) The employer must ensure that each employee receives training, in a language and at a literacy level the employee understands, and so that the employee comprehends at least the following

(i) That airborne pathogens spread through the air when inhaled, and some airborne pathogens (including COVID-19) can spread without or prior to onset of symptoms.

(ii) On the availability of vaccines and access rights for employees to get vaccinated.

(iii) On the airborne pathogen plan, including the coordinator, and how that relates to the employee's duties.

(iv) On the duty to report signs and symptoms of airborne illness to the employer, and of the right of the medical benefits removal program.

(v) Of the rights for employees to voluntarily wear a mask or respirator.

(vi) How the employee can obtain copies of the airborne pathogens plan.

(vii) Of the anti retaliation rights under this program.

(viii) On specific risks identified in the workplace.

(3) Employers may rely on training completed prior to the effective date of this section to the extent that it meets the relevant training requirements under paragraph (2) except for the requirements of paragraph (2)(vii).

(4) The employer must ensure that each employee receives additional training whenever the airborne pathogen plan changes and notify employees of a new safety employer. Additional training must be provided when changes occur that affect the employee's risk of contracting airborne pathogens at work or there is an indication that the employee has not retained the necessary understanding or skill.

(4) The employer must ensure that the training is overseen or conducted by a person knowledgeable in the covered subject matter as it relates to the employee's job duties and that the training provides an opportunity for interactive questions and answers with such a person.

B. Enhanced Risk Protection

This section applies to employers, and instead of the requirements in other sections, is intended to be flexible. It requires a risk assessment and consideration of specified tools that have been shown to be effective.

1910.502. Risk Assessment and Enhanced Protections

(a) Each employer shall conduct a risk assessment as to the risks at an workplace or the locations where an employer works pursuant to section 501(d) to determine what additional steps need to be implemented.

(b) Each employer must implement a plan that is designed to reduce to a level of risk acceptable to the employer and employees at the workplace the risks of spread of airborne pathogens. Such a risk assessment must consider the levels of community spread in determining when to implement, or discontinue, certain precautions.

(c) The plan must address:

(1) screening of individuals entering the workplace.

(2) physical distance.

(3) ventilation and filtration.

(4) face coverings, masks, respirators, and fit testing, as appropriate.

(5) minimizing density.

(6) teleworking or working remotely.

(d) The plan must consider the dangers that certain workplaces face elevated risk, including how certain workplaces had enhanced risks of spread during the COVID-19 pandemic. These dangers include:

(1) healthcare settings, where patients who have airborne diseases are expected to be.

(2) congregate living facilities, where airborne pathogens rapidly can spread, residents are vulnerable, and can’t be excluded.

(3) manufacturing, such as meat packing or poultry plants, where workers are often close together in cold spaces,

(4) agriculture where workers live in congregate settings outside of working hours.

(5) warehouses where workers are packed closely together.

(6) workers interacting with the public directly, especially indoors, who have exposure to more people who have not been screened or may be asymptomatic.

(7) bars, fitness centers, indoor exercise, and singing, where individuals have elevated respiratory rates and are unmasked.

Note: As of when submitted, the United States has substantial spread of airborne pathogen covid-19.

(e) Employers must when the Center for Forecasting and Outbreak Analytics indicates substantial local, regional, or national spread of an airborne pathogen is presently occurring, implement the following steps:

(1) An employer shall have employees who can, feasibly, without loss of significant productivity, work remotely or telework do so.

(2) An employer shall screen visitors, other than customers, to a location. Any employer may screen customers.

(3) The employer shall take steps to reduce density in the workplace, to the extent feasible, and to ensure workers and others can maintain physical distance.

(4) The employer shall ensure that individuals maximize physical distancing between themselves and others when possible. This does not require members of the same party to stay over six feet apart. When maintaining six feet is not feasible, a lesser distance can be maintained.

(5) The employer shall take steps to improve ventilation and filtration if indoors, consistent with the guidance from the American Conference on Government Industrial Hygienists. This shall only apply indoors.

(6) An employer shall offer individuals in positions that place them at elevated risks the ability to wear fit tested respiratory protection.

(7) An employer shall ensure that all visitors wear a face covering and may provide exceptions:

(i) when outdoors;

(ii) while eating, drinking, or taking medication, for brief periods of time;

(iii) while obtaining a service (for example, a medical or dental procedure) that requires removal of the face covering in order to perform the service;

(iv) while playing certain musical instruments;

(v) while communicating, for brief periods of time, with a person who is hearing impaired when the ability to see the mouth is essential for communication;

(vi) when necessary to temporarily remove the face covering to verify one's identity;

(vii) for a child under the age of 2 years; or

(viii) for a person who is unable to wear a face covering due to a disability.

(8) An employer shall provide each employee a barrier face covering meeting ASTM level F3502, a medical mask, or a respirator. An employer is permitted to allow an employee to wear their own face covering instead of an employer provided mask.

(9) An employer shall require every employee to wear a face covering or a mask and permit any employee to wear a respirator except:

(i) When an employee is alone in a room or vehicle.

(ii) While an employee is eating, drinking, or taking medication at the workplace, provided each employee is at least 6 feet away from any other person.

(iii) When employees are wearing respirators in accordance with section 134 or section 504.

(iv) When it is important to see a person's mouth (e.g., communicating with a hearing impaired person) and the conditions do not permit a face covering.

(v) When employees cannot wear face coverings due to a medical necessity, medical condition, or disability as defined in the Americans with Disabilities Act (42 USC 12101 et seq.). The exception for people with disabilities applies to a narrow group of individuals with severe disabilities for whom wearing a face covering

would pose deadly risks, including those who would not know to remove their face covering if they are having difficulty breathing, those who are unable to independently remove their face covering themselves, or those who cannot communicate promptly to someone else that their face covering must be removed.

(vi) When the employer can demonstrate that the use of a face covering presents a hazard to an employee of serious injury or death (e.g., arc flash, heat stress, interfering with the safe operation of equipment).

(vii) When the employer can demonstrate that the use of a face covering prevents an employee from performing an essential part of their job.

(viii) When an employee is outdoors.

The next requirement is designed to allow an employer to get an exemption through respiratory protection, but make clear an employee cannot be required to wear a tight fitting respirator. This is intended to provide additional protection.

(f) An employer is not subject to the requirements in subsection (e) if all employees are wearing a fit tested respirator.

C. Industry And Setting Based Requirements

1. In General

This is based on the goals of separating different industries based on risk. For example, an administrative office separate from a hospital or nursing home will not be

treated as such, because an industry based designation is not consistent with the settings based approach. However, a presumption will be applied for consistency. Consequently, the following statement will be added:

503.1. Requirements

Employers shall comply with sections 503.2 and 503.3 if they are within the scope of those standards.

2. Healthcare

As to healthcare facilities, slightly different requirements will be met. While it will be easy to specify which settings are clear. Instead, the rule will require settings where patients are seen who have suspected airborne infections to be seen.

503.2 Healthcare settings.

(a) Scope. This is intended to apply to all healthcare facilities where patients who have respiratory symptoms or systems of an airborne disease are seen. As a presumption, all industries inside NAICS code 62 are covered except for code 624.

The next requirement is triaging. This is intended to expedite the placement of patients into the proper room, and keep patients who have an airborne infection out of the waiting room. Things such as filling out insurance information, medical history, and HIPAA can be filled out once the patient leaves the waiting space. In addition, screening will require the masks, with two exemptions for a separate room and infeasibility. It also contains an exception for emergency rooms.

(b) Screen and Triage.

(1) Patients entering healthcare facilities must be expeditiously screened for signs of an airborne pathogen. If symptoms or other screening suggests the patient may have an airborne pathogen, the patient must be forthwith given (and asked to wear) a mask if not wearing a mask, if the patient, escorted to a private room, and the door closed. Any check-in process for such a patient must be conducted in the private room.

(2) The person performing face to face screening must wear a mask or respirator if being performed indoors, unless that may be a hinderance, or the screening area is a separate room and is conducted through a window, which may have a small movable opening. If the mask is a hindrance, six feet or the maximum distance must be maintained while unmasked. Any person escorting a person pursuant to paragraph (a)(1) of this subsection must wear a mask, if not wearing a respirator.

(3) Any employer covered by The Emergency Medical Treatment and Labor Act may if the patient is being medically transported, rely on the transporter to make an assessment. Such provider is not required to delay care to screen a patient for symptoms, but in such a case, must treat the patient as having an airborne pathogen for infection control purposes only. Placement in a negative pressure room is not required in such cases.

The next set of requirements are based on ensuring that proper isolation occurs for such locations.

(c) Requirements for infection control.

(1) A person suspected or confirmed to have an airborne infection must be placed on airborne isolation. All individuals interacting with a person on airborne isolation, in an airborne isolation unit, or in a room where airborne isolation is required, must wear fit tested respiratory protection. This does not apply to a patient.

(2) If not outdoors, the patient shall be placed in a negative pressure room, if feasible. The door shall be kept closed to the room. Indoor air from the room shall be filtered for airborne pathogens before being recirculated, if not fully vented outside. This does not prohibit creating seperate units that meet these requirements but may have the doors open between different rooms in the unit.

(3) Once an airborne isolation unit or room is clear, the unit or room must remain vacant of individuals not wearing a fit tested respirator until a sufficient time elapses between uses as the Effective Air Change Chart incorporated by reference in section 505(a) of this subpart specifies.

(d) A healthcare facility which has an outbreak and is a hospital shall comply with the requirements of section 503.3 of this subpart.

3. Congregate Care Settings

In a congregate care setting, I will be imposing specific requirements based on the uniquely enhanced risks in such settings. First, they are not often ventilated. And second, an airborne virus can quickly spread throughout the facility. This also requires screening for symptoms in such a location.

1910.503.3. Congregate living facilities.

(a) Scope. This applies to all settings where congregate living facilities. It is presumed that NAICS codes 622210, 623, 624221, and 922140 are congregate living facilities.

(b) Screening. Congregate living facilities must screen all non-resident upon entering the facility and deny entry to any person who has symptoms of an airborne pathogen, other than a resident. Residents shall be screened periodically and when appropriate for being infectious for an airborne pathogen.

(c) Isolation. Any resident who has symptoms of an airborne pathogen and may be infectious shall be isolated as required by section 502.3(c) of this subpart. If negative pressure and either filtration of all air exiting the isolation area with HEPA filtration or 100% exhaust is unavailable, the facility must expeditiously transfer the resident to another location that can provide requisite care and comply with the filtration requirements.

(d) Outbreak. In the event of an outbreak, as declared by the facility, a governmental agency, or OSHA, the facility shall comply with the requirements of section 501(g).

4. Delivery Person

I recognize that delivery services where a person briefly enters a space to drop off or pick up an item are different. Such deliveries are brief, and special requirements are needed to protect this industry from the unfeasible burden of having to coordinate with other employers. This is also intended to cover some other items, such as outdoor curbside pickup, but not takeout. Due to the lower risks outside, this would be exempt. It

is intended to lessen the burden on this industry and other who perform similar functions. This is intended to be functional in nature.

1910.503.4 Delivery Person.

(a) Scope.

(1) A person shall be deemed a deliverer if they are a delivery person, a messenger, or other person enter a workplace only briefly to drop off or pick up items. Such a person need not be an employee but may not be a shopper.

(2) An employer may treat a person doing outdoor curbside pickup, or outside ordering to go as a delivery person, may be treated as a deliverer person for purposes of this standard. Such a person may not be permitted inside the employment facility for this exception to apply, but may be permitted to stay and wait in an outdoor area.

(b) Airborne Pathogen Plan. An employer, other than an employer of a deliverer performing duties for the employer, is not required to be considered in the formation of an airborne pathogen plan. An employer is not required to consider deliverers in an airborne pathogen plan, except as required by subsection (d) of this section. for a facility covered by section 503.2 (healthcare) or 503.3 (congregate living facility). If a deliverer waits inside the facility, they must be requested to comply with any face covering or physical distancing requirements that an employer imposes on other non-employees in the workplace.

(c) Outbreak. In the case of an outbreak, a deliverer must be kept outside of the workplace, or in the case of a facility covered by section 503.3, the facility.

(d) Healthcare or Congregate Living Facility. A facility covered by section 503.2 or 503.3 of this section must implement the following practices

(1) A deliverer must not be permitted into an area where individuals who are suspected or confirmed to have an airborne pathogen and still may be contagious is present or has been present until a sufficient time elapses as the Effective Air Change Chart incorporated by reference in section 505(a) of this subpart.

(2) A deliverer who stays waites for any period of time must be screened per the policy for screening visitors for airborne pathogens.

(e) Positive Case. This section does not exempt an employer of a deliverer from section 501(e) of this part. This does not require maintaining a list of individuals who performed delivery.

D. Respiratory Protection

This section is based on the need to

1910.504 Respiratory Protection.

(a) Scope.

This rule applies to the wearing of respiratory protection pursuant to the Airborne Pathogens COVID-19 rule. It is recognized that in the context of an airborne pathogen, preventing atmospheric contamination through engineering controls is often inadequate and certain requirements of 29 CFR 1910.134 are inadequate.

This rule is designed to eliminate medical evaluations, allow a surgical mask brace, and provide other flexibility to reduce the burdens of full respiratory protection.

This eliminates the engineering controls as they are conducted in part and also the medical evaluation based on the experience that has been received over the past year that virtually anyone can wear a mask, even if having some medical conditions.

(b) Fit Tested Respirator.

(1) An employer who provides and workers wear respiratory protection in accordance with section 1910.134 for hazards other than solely airborne pathogens shall comply with the requirements of that section shall be deemed to be wearing a fit tested respirator, notwithstanding any other provision of this section.

(2) An employer who implements a respiratory protection program only for airborne pathogens shall comply with the requirements of 1910.134 except as follows:

(i) The employer is not required to use engineering controls pursuant to section 1910.134(a)(1).

(ii) The employer is not required to comply with the requirements of subsection 1910,134(e) unless an atmosphere-supplying respirator is used. In such a case, the employer must comply with paragraph (c)(4).

(iii) An employer may accept a fit test performed for another employer within the past 12 months. The fit test shall only be valid for the type and model of mask so tested.

(iv) An employee may be fit tested on a medical mask surrounded by a brace which completely surrounds the medical mask. The specific

brace shall be cleanable, reusable, specific to the employee, and fit tested to such employee. The model of mask shall be fit tested to the an individual brace.

(3) An employee using a powered air purifying respirator that does not require fit testing shall be deemed to be wearing a fit tested respirator when the employer complies with the provisions of subdivision (c).

(c) An employer provided respirator shall comply with the following conditions:

(1) *Training.* The employer must ensure that each employee wearing a respirator receives training prior to first use and if they change the type of respirator, in a language and at a literacy level the employee understands, and comprehends at least the following:

(i) How to inspect, put on and remove, and use a respirator;

(ii) The limitations and capabilities of the respirator, particularly when the respirator has not been fit tested;

(iii) Procedures and schedules for storing, maintaining, and inspecting respirators;

(iv) How to perform a user seal check as described in paragraph (d)(2) of this section; and

(v) How to recognize medical signs and symptoms that may limit or prevent the effective use of respirators and what to do if the employee experiences signs and symptoms.

(2) *User seal check.*

(i) The employer must ensure that each employee who uses a tight-fitting respirator performs a user seal check to ensure that the respirator is properly seated to the face each time the respirator is put on. Acceptable methods of user seal checks include:

(A) Positive pressure user seal check (*i.e.,* blow air out). Once you have conducted proper hand hygiene and properly donned the respirator, place your hands over the facepiece, covering as much surface area as possible. Exhale gently into the facepiece. The face fit is considered satisfactory if a slight positive pressure is being built up inside the facepiece without any evidence of outward leakage of air at the seal. Examples of evidence that it is leaking could be the feeling of air movement on your face along the seal of the facepiece, fogging of your glasses, or a lack of pressure being built up inside the facepiece. If the particulate respirator has an exhalation valve, then performing a positive pressure check may not be possible unless the user can cover the exhalation valve. In such cases, a negative pressure check must be performed.

(B) Negative pressure user seal check (*i.e.,* suck air in). Once you have conducted proper hand hygiene and properly donned the respirator, cover the filter surface with your hands as much as possible and then inhale. The facepiece should

collapse on your face and you should not feel air passing between your face and the facepiece.

(ii) The employer must ensure that each employee corrects any problems discovered during the user seal check. In the case of either type of user seal check (positive or negative), if air leaks around the nose, use both hands to readjust how the respirator sits on your face or adjust the nosepiece, if applicable. Readjust the straps along the sides of your head until a proper seal is achieved.

(3) *Reuse of respirators.*

(i) The employer must ensure that a filtering facepiece respirator used by a particular employee is only reused by that employee, and only when:

(A) The respirator is not visibly soiled or damaged;

(B) The respirator has been stored in a breathable storage container (*e.g.*, paper bag) for at least five calendar days between use and has been kept away from water or moisture;

(C) The employee does a visual check in adequate lighting for damage to the respirator's fabric or seal;

(D) The employee successfully completes a user seal check as described in paragraph (d)(2) of this section;

(E) The employee uses proper hand hygiene before putting the respirator on and conducting the user seal check; and

(F) The respirator has not been worn more than five days total.

Note to paragraph (d)(3)(i): The reuse of single-use respirators (*e.g.,* filtering facepiece respirators) is discouraged.

(ii) The employer must ensure that an elastomeric respirator or PAPR is only reused when:

(A) The respirator is not damaged;

(B) The respirator is cleaned and disinfected as often as necessary to be maintained in a sanitary condition in accordance with § 1910.134, Appendix B-2; and

(C) A change schedule is implemented for cartridges, canisters, or filters.

(4) *Discontinuing use of respirators.* Employers must require employees to discontinue use of a respirator when either the employee or a supervisor reports medical signs or symptoms (*e.g.,* shortness of breath, coughing, wheezing, chest pain, any other symptoms related to lung problems, cardiovascular symptoms) that are related to ability to use a respirator. Any employee who previously had a medical evaluation and was determined to not be medically fit to wear a respirator must not be provided with a

respirator under this standard unless they are re-evaluated and medically cleared to use a respirator. This is anticipated to be a rare occurrence.

(d) Voluntary use. An employer may permit voluntary use of a respirator without any additional requirements on the employer.

E. Incorporated by Reference

This section is a list of topics that need to be established separately.

1910.505. Incorporated by reference.

(a) Table for Adequate Time for Sufficient Air Exchanges: https://www.cdc.gov/infectioncontrol/guidelines/environmental/appendix/air.ht

(b) Consensus Guidelines from the American Conference of Governmental Industrial Hygienists.

F. Disease Specific Information

This section is designed to be implemented so that disease specific information can be made available. I will implement this for COVID-19.

1910.506. COVID-19

(a) Period of quarantine. The period of quarantine is from 2 to 14 days from when exposure occurs. Quarantine may be exited after 7 days with a test on or after day 5.

(b) Period of isolation. The period of isolation lasts from 2 days before until 10 days after the onset of symptoms, or when a person tests positive if symptoms do not appear.

(c) Symptoms. Symptoms that must be reported to an employer by an employee and result in medical removal under section 501(f)(2)(iv) are:

(1) experiencing recent loss of taste and/or smell with no other explanation.

(2) experiencing both fever (≥100.4 °F) and new unexplained cough associated with shortness of breath.

IX. Conclusion

I thank OSHA for granting the ability to offer this supplemental brief and look forward to testifying at the hearing on the petition remotely. All workers need protection and this should be expedited as quickly as possible.

Sincerely,

Theo Allen